

# MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

Vol. 61  
No. 1

ESTABLISHED 1882

\$4.00 Per Year  
Single Copy 15 Cents

## *In This Issue:*

Mineral Production in the Country in the First  
Ten Years of the Century.

Increasing Importance of Louisville as a Lumber  
Center.

Key West Preparing for Great Industrial  
Advancement.

Reflections of Southern Material Progress in  
1911.

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Alphabetical Index, Page 118.  
Classified Index, Pages 112 to 117.  
Classified Opportunities, Pages 80, 81 and 82.

BALTIMORE, JANUARY 11, 1912

# B. t. u.

## THE MEASURE OF HEAT

The term British thermal unit (abbreviated B. t. u.), often confronts the user of coal. As a yard stick is a measure of length, a B. t. u. is a measure of heat. The total amount of heat contained in a pound of fuel, all of which is liberated by complete combustion, is expressed in B. t. u.'s. A single heat unit is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at atmospheric temperature. Heat units make steam and steam makes power.

Below are tabulated, from some of the highest scientific authorities, the heat values of the commoner combustibles contained in coal:

SUBSTANCE	B. t. u. Per Lb.	
Acetylene Gas	21,465	Included in the "Volatile Matter" of proximate analysis.
Marsh Gas	23,515	
Olefiant Gas	21,345	
Hydrogen Gas	62,035	
Carbon	14,450	"Fixed Carbon" of proximate analysis.

## CLINCHFIELD COAL IS HIGH IN HEAT VALUE

Clinchfield coal is rich in Hydrogen and the Hydro-Carbon gases shown above. These "VOLATILE" gases burn above the fuel bed with rapidity and great intensity in close proximity to the boiler surfaces. Quick liberation of heat units means quick generation of steam; hence the economy in using Clinchfield coal which maintains boilers at high capacity easily and continuously, thus delivering more than the rated horsepower. Clinchfield coal ranges from 14,000 to 14,700 heat units per pound, because it contains small percentages of oxygen, moisture and ash, which are valueless, and large percentages of the combustibles highest in heat value.

### OUTPUT OF MINES OF

## CLINCHFIELD COAL CORPORATION

2,000,000 Tons Per Annum, and Growing

## CLINCHFIELD FUEL COMPANY

Selling Agent

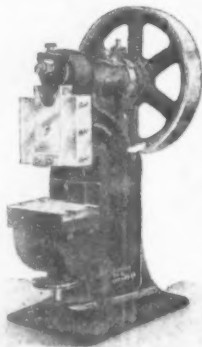
SPARTANBURG, S. C.

Southern Terminal C., C. & O. Ry.

## PERFORATED METALS FOR ALL USES

You will find our prices and goods "RIGHT"  
Send complete specifications. Erdle Perforating Co., Rochester, N. Y.  
Send for Metal sample plate.

## Stiles Presses with Adjustable Beds



Built in various sizes, are specially useful for heavy bending, forming, punching and stamping operations in the manufacture of hardware, cutlery, electrical parts, automobile parts, etc. The design of the frame combines greatest strength and rigidity, all adjustments are rapid, convenient and accurate. The adjustable table allows of using dies varying considerable in height; when the table is removed boring tools may be operated. Write for details, stating requirements.

"Presses for Every Requirement."

E. W. BLISS CO.

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BROOKLYN, N. Y.

Representatives for Chicago and Vicinity: Stiles-Morse Co., 662 Washington Boulevard, Chicago, Ill.

## THE BOURSE

Exhibition Department offers you an opportunity to

### EXTEND YOUR BUSINESS

For full particulars address Exhibition Department, THE BOURSE, Philadelphia



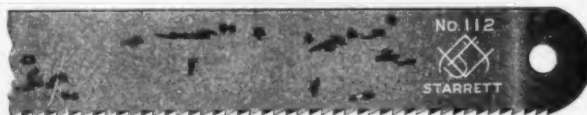
No. 62 Pig Iron Barrow.

## WHEELBARROWS OF ALL KINDS

Also the Largest Line of  
DRAGS, ROAD AND WHEEL SCRAPPERS, HAND  
CARTS, TRUCKS, Etc.

SYRACUSE CHILLED PLOW CO.

SYRACUSE, N. Y., U. S. A.



When you sell a Hack Saw try to find out on what sort of work it will be used. Show your clerks what each kind of saw will do. This will add to your reputation and your sales.

## Starrett Hack Saw Frames

will immediately be coveted by a good mechanic—he will see the many special features and the fine quality of workmanship and finish.

Send for free catalog 19EC.

## THE L. S. STARRETT COMPANY

ATHOL, MASS., U. S. A.

New York  
150 Chambers St.

Chicago  
17 N. Jefferson St.

London,  
36-37 Upper Thames St., E. C.

B-14





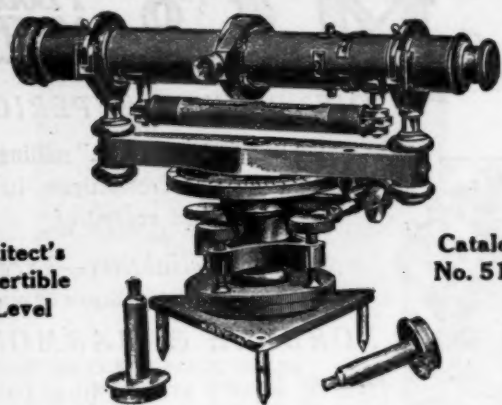




LA E

2





Architect's  
Convertible  
Y Level

Catalogue  
No. 5115

## MANUFACTURERS find that our CONVERTIBLE - Y - LEVEL

is useful for aligning shafting, walls and columns.

ARCHITECTS, BUILDERS and CONTRACTORS will save time, labor and chance of error in leveling ground, checking excavation work, foundations and floors by using one of these instruments.

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General Office and Factories  
HOBOKEN, N. J.

CHICAGO 68 W. Madison St. ST. LOUIS 813 Locust St. SAN FRANCISCO 48-50 Second St. MONTREAL 252 Notre Dame St. W.  
Drawing Materials Mathematical and Surveying Instruments Measuring Tapes

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Plants as

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Sacramento, Cal.  
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Plymouth Clay Product Co.,  
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Shawmut Clay Co.,  
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Don Valley Brick Works,  
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Pomona Terra-Cotta Co.,  
Pomona, N. C.  
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And in every city, town, village  
and crossroads in the United  
States where Sewer Pipe and  
Clay Machinery is used.

Send for Catalogue  
No. 27.

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Rice-Clerkin Co.  
Mfrs.

The Machinery Folks  
of  
AKRON, OHIO,  
U. S. A.



There is a widespread, progressive movement afoot for the square deal in business. An honest dollar's worth for every dollar.

This movement has hit the building industry—one step toward better building is better nails.

### La Belle Cut Nails

are made for utmost service to the buyer of building construction. Made in all sizes, for every class of work.

La Belle Galvanized Cut Nails—Regular La Belle Cut Nails, galvanized by a superior process, to add to their durability.

## La Belle Iron Works

General Offices: Steubenville, O.

Works:  
Steubenville, O.

Works:  
Wheeling, W. Va.

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### STRONG YET LIGHT—A RARE COMBINATION

Built low; Short coupled; Outside chains; Unbreakable front bolster; Jointed king bolt and other invaluable features.

### THE DUMP WAGON THAT SATISFIES

The Western line of earth and stone handling machinery—celebrated throughout the country.

Catalog on application.

## WESTERN WHEELED SCRAPER CO.

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# Locomotive Cranes

The Latest Design of the  
Foremost Manufacturers

Arranged for handling

**Grab Bucket  
Lifting Magnet  
Hoisting Block**

and other special applications.



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AND PRICES UPON  
REQUEST.

WRITE FOR  
BULLETIN No. 119.

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Buffalo, 601 Ellicott Square.  
Pittsburgh, 1501-3 Park Bldg.

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St. Louis, Central Natl. Bank Bldg.  
Seattle, 439 New York Block.  
Denver, Lindrooth, Shubart & Co.  
New Orleans, Wilmot Machy. Co.  
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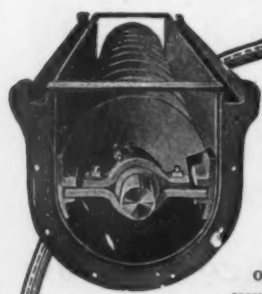
## POWER PLANT REPAIRS

Engines, Boilers and Pumps Repaired  
Cylinders Bored Without Dismantling

**WE ALSO BRAZE BROKEN CASTINGS**

CORRESPONDENCE SOLICITED

**THE STRICKLAND MACHINE CO.**  
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The screw conveyor in its most perfect form—HELICOID—is still made by the Caldells at Chicago, and nowhere else. Caldells are the only people who actually roll a continuous conveyor flight, by any process. Others roll or press short flights which have to be lapped and riveted together and pinned to the pipe at every turn. But they're just beginning where Caldells left off several years ago. A screw conveyor is economical and requires little room, and while you're buying, buy the best; buy HELICOID with continuous flight and metal properly distributed in the flight—HELICOID with larger shaft, greater capacity and increased durability. HELICOID is all-round satisfaction at the same price.

Catalog  
34

Steel  
Boxes

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Caldwell & Son Co.**

Chicago, Western Ave., 17th-18th St.  
NEW YORK  
Fulton Bldg., Hudson Terminal, 50 Church St.



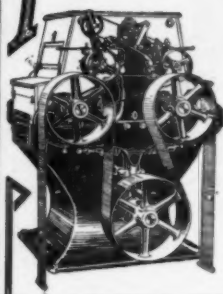
## N & M Co. FLOUR MILL MACHINERY

THE PROVEN SUPERIORITY

of all "N & M Co." milling  
equipment rests upon its  
unequalled record of

*Economy—Reliability—Excellence*  
Established during the past 60 years.

**NORDYKE & MARMON CO.**  
AMERICA'S LEADING MILL BUILDERS  
1833 W. MORRIS ST., INDIANAPOLIS, IND.  
Sixty Years of Successful Manufacturing



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Manufacturers of FLOUR AND CORN MILL MACHINERY, WOOD SPLIT AND IRON PULLEYS,  
RING OIL HANGERS, COUPLINGS, GEARINGS, COLLARS, Etc.

Shafting, Belting, Mill and Elevator Supplies in Stock.

Write for Prices.

Roll Corrugating a Specialty.

## "STAR" MILLS

Established 1847

Equipped with

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OP  
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ST  
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make the old-fashioned  
"WATER GROUND TABLE MEAL"

Write for prices and discount

B. F. STARR CO., Baltimore, Md.

WHEAT, RYE, CORN, ALFALFA MILLS

## We Build Good Mills

All our time and thought is  
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the mills we build are the  
very best that money can  
buy.

**We allow you to buy  
machinery on trial**

and if they do not do the  
work intended, or for any  
reason whatsoever they do  
not suit, they may be re-  
turned.

**You Can't Go Far Wrong**

THE WOLF COMPANY

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Metal  
Figures  
and  
Letters.



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jobber does not carry them.

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2M NIAGARA FALLS, N. Y., U. S. A.

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ROME, GA.

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**SCALES AND TRUCKS**

OF ALL KINDS.



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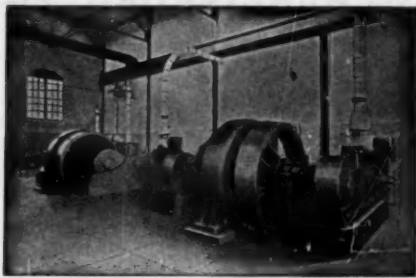
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Our Catalogue contains every im-  
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heavy weighing machines.

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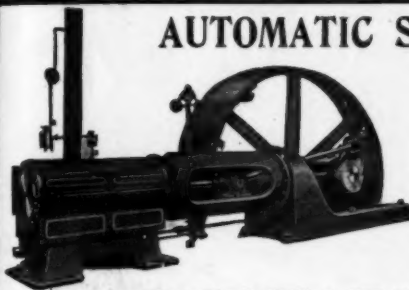


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For Electric Service

**Ball Engine Company**

ERIE, PA.



## AUTOMATIC STEAM ENGINES

Simple and Compound.  
For Belt or Rope Drive.  
Direct Connected to Generator or  
Ice Machine.

Mill Gearing a Specialty

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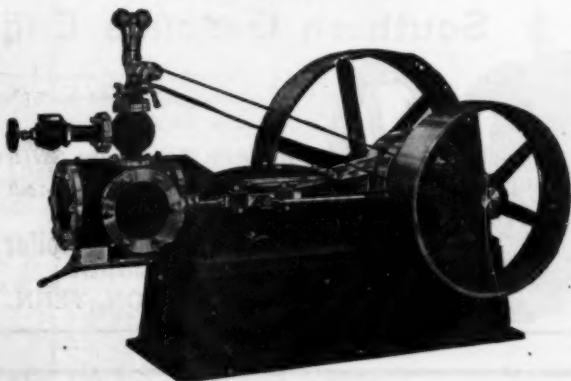
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CINCINNATI, OHIO

New York Office, 180 Nassau Street

## AMES IRON WORKS

MANUFACTURERS OF



## ENGINES AND BOILERS

WORKS—OSWEGO, N. Y.



AGENCIES THROUGHOUT THE SOUTH

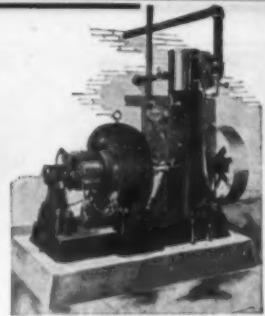
Are You Operating An Electric Light Plant of Your Own?

## An "ABC" Vertical Enclosed Self-Oiling Steam Engine

direct connected to any good make of generator will supply current at a saving of 25% over buying from a central station. These engines practically take care of themselves, running anywhere from three to twelve months without adding new oil to original supply or making adjustments.

Where shall we mail Engine Bulletin No. 285-MR?

**AMERICAN BLOWER COMPANY**  
DETROIT, MICH.  
U. S. A.

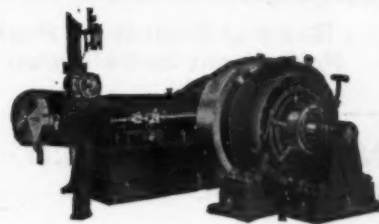


"ABC" Engine direct connected to dynamo for electric lighting industrial plant.

## Phoenix Iron Works Company

BUILDERS OF

**Automatic  
Cut-off  
Engines**



ALSO

**Boilers, Heaters, Tanks and Gas Condensers.**

General Offices and Works,

**MEADVILLE, PA.**

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## COOPER CORLISS ENGINES

Complete Steam Plants a Specialty

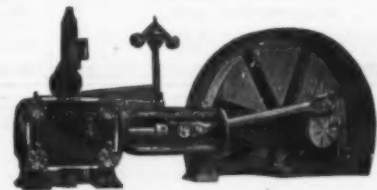
**THE C. & G. COOPER CO.**

BUILDERS

Home Office and Works

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Branch Offices: Atlanta, 560 Candler Annex; Charlotte, Courthouse Square; New York, 1419 Bowling Green Bldg.; Boston, 201 Devonshire St.; Philadelphia, Drexel Bldg.; Pittsburgh, 604 Frick Bldg.; Chicago, 1530 First Nat. Bank Bldg.



## The Griffith & Wedge Co.

Established 1840

ZANESVILLE, OHIO, U. S. A.

Manufacturers of

**The Ohio Corliss Engine**

SEND FOR CATALOGUE



## Have You Seen the Latest

in Steam Turbines, Centrifugal Pumps, Turbine-Driven Boiler Feeders, Centrifugal Blowers, Centrifugal Air Compressors, Turbine-Driven Direct-Current Generators, Centrifugal Fire Pumps, Centrifugal Hydraulic Pressure Pumps, and other Turbine and Centrifugal Machinery?

Catalog No. "C-45" will show you the most efficient steam turbines for all sizes and centrifugal pumps for all heads and capacities from circulating and boiler feed pumps to waterworks pumps. The booklet also illustrates high-pressure blowers and air compressors directly connected to steam turbines.

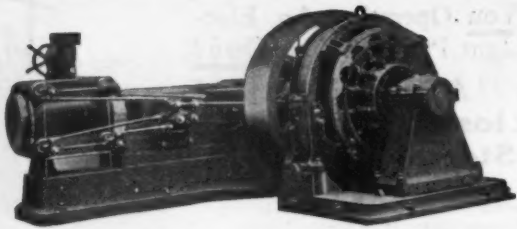
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**DE LAVAL**

STEAM TURBINE CO.,

55

TRENTON, N. J.



## The Basis of Power Plant Economy

finds its first opportunity in the selection of equipment of **Maximum Earning Power.**

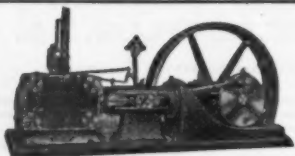
Your first step toward more efficient operation should be the selection and installation of

### Ridgway Engines and Generators

which have shown by repeated tests the highest efficiency possible to secure from an electric generating unit.

They are built and sold on a **Basis of Quality—of Profit Earning Capacity—of Permanent Satisfaction** to the user.

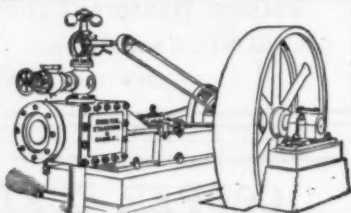
**RIDGWAY DYNAMO & ENGINE CO.**  
RIDGWAY, PA.



### CORLISS ENGINES

Boilers of all Styles and Sizes  
**The Murray Iron Works Co.**

INCORPORATED FEB. 1, 1870  
BURLINGTON, IOWA  
ENGINE ON EXHIBITION IN THE BOURSE  
PHILADELPHIA, PA.

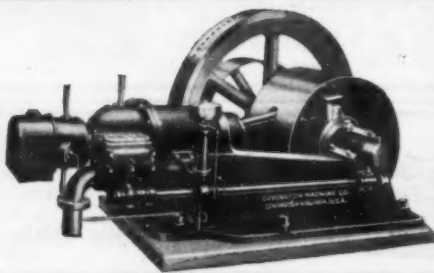


### HEAVY DUTY THROTTLING ENGINES

We build a larger number of this type than anyone else in America. Shaft governor Engines.

**BOILERS**—large finely equipped works.  
THE HOUSTON, STANWOOD & GAMBLE CO., Cincinnati, O.

ASK YOUR  
CONSULTING  
ENGINEER



**Dependable—Durable—Economical**

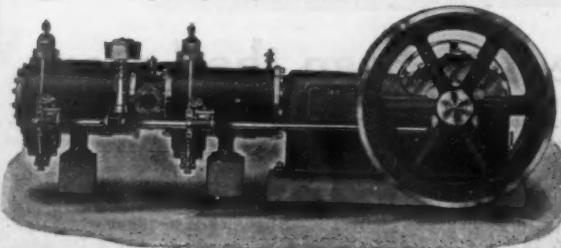
Covington Machine Co. Works: Covington, Va.  
BURT D. POWELSON, Sales Agent - 4 Rector Street - New York

**COVINGTON OIL ENGINES**



### BOGART GAS ENGINES

Enclosed Dust and Dirt Proof Bed  
Especially Adapted to Mill Elevators and Cotton Gins



Gives Perfect Speed.  
Made in all sizes.

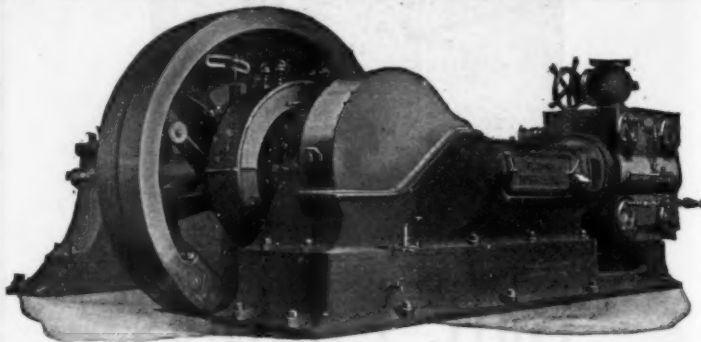
No cylinder packing to blow out. Automatic lubrication and timing of ignition fully described in Bulletin 19.

Requires less attention than a steam engine.

**Bogart Gas Power Engineering Co.**  
Buffalo, N. Y.



## FLEMING-HARRISBURG ENGINES



**Harrisburg Foundry & Machine Works, Harrisburg, Pa.**

BALTIMORE OFFICE  
Continental Bldg.

ATLANTA OFFICE  
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### THE PRIMM OIL ENGINE

OPERATES ON  
Crude, Fuel, Gas or Solar Oils, Distillate,  
Kerosene or Gasoline.



Two cycle type.  
Steady as a clock.  
Perfectly dependable  
for any purpose.  
Write for catalog and  
name of nearest representative.

That for Week—Our engines are guaranteed to run.

**The Power Mfg. Co.**  
Cor. Greenlawn Ave. and C. & E. R. R.  
LIMA, OHIO

## The Akerlund Bituminous Gas Producer FOR CHEAP AND RELIABLE POWER

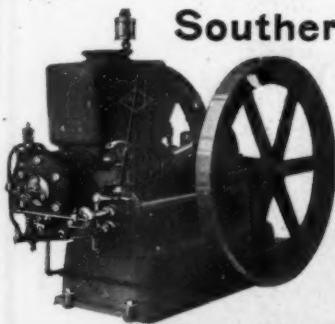
Write for Information

STANDARD GAS POWER CO.

Walton Building

ATLANTA, GA.

## Southern Gasoline Engines



We make an improved heavy  
duty gasoline engine of all  
sizes for all purposes.

**Agency Contracts Still Open**

Write for Catalogues and full  
information.

**Southern Engine & Boiler Works**  
Manufacturers  
JACKSON, TENN.

## 70% Reduction in Power Cost

has been made in many  
cases by using

### FAIRBANKS-MORSE OIL ENGINES

They will save you the difference  
between the cost of cheap crude  
oil and that of the higher priced  
liquid fuels.

**Thoroughly Reliable.**

**Easy Starting.**

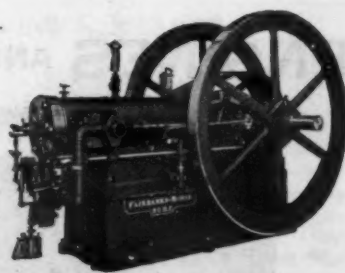
Furnished in single unit, vertical and horizontal types, up to 500 H. P.  
Power Plants up to 2000 H. P.

Write for Catalog No. 938PN.

**Fairbanks, Morse & Co.,**

Branches in Principal Northern Cities

Atlanta, Ga., Jacksonville, Fla.,  
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Main Office: 900 So. Wabash Ave.,  
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# OTTO GAS AND GASOLINE ENGINES

The good old reliable **Otto** Engine that has held the lead for the past 36 years.

They embody the most up-to-date principles in gas engine practice.

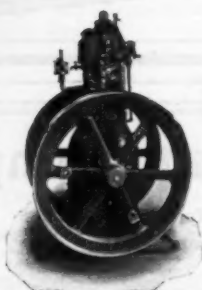
**ARE HIGHER GRADE THAN EVER, YET  
LOWER IN PRICE THAN FORMERLY**

Our improved manufacturing facilities and increasing volume of business make more attractive selling prices possible.

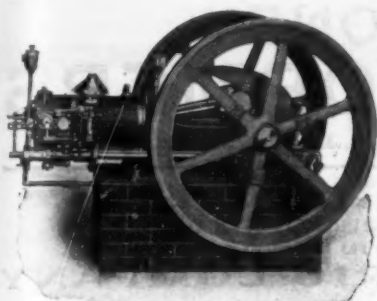
We have an Otto of the right size and type to suit your needs whether for the shop, mine, farm or country home.

An Otto will furnish more dependable and economical power than any other engine.

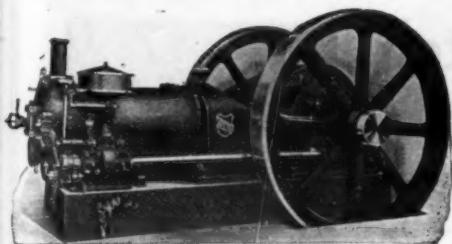
Here is only one proof of our claim that the Otto is the cheapest engine you can buy. Read this letter; we have hundreds of others similar to it.



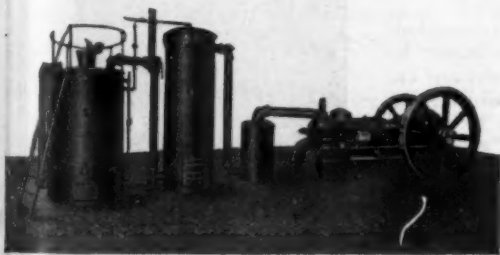
1, 2, 3 1-2 and 8 H. P.



10 Sizes—4 to 40 H. P.



Throttling Governor Type  
50 to 300 H. P.



Otto Suction Gas Producer Plants  
built in 16 sizes from 13 H. P. to 300 H. P.

AMERICAN SCREEN CO.  
Manufacturers of  
Metal Screens in Metal Tracks  
Factory and Office  
302 Washington Street  
Brookline, Mass.

Brookline, Mass., Dec. 6, 1911

Gentlemen:

Yours of the 5th at hand and would say that our Engine No. 242, (10 horse) Otto Gas bought in 1880 is still in use and in first class shape. As for fuel bills, we never consider them, the amount is so small. We are perfectly satisfied with our engine.

Yours truly,  
American Screen Co.

**31 years in use and perfectly satisfied!!**

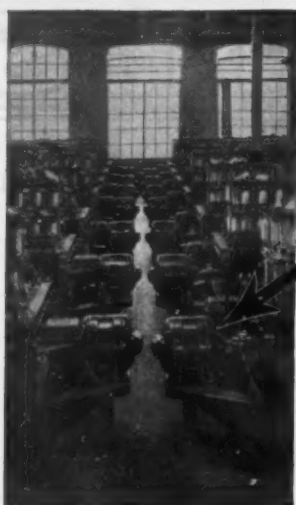
We have descriptive Bulletins on each type to send you free upon request. What size interests you now?



## THE OTTO GAS ENGINE WORKS

Walnut Street, PHILADELPHIA, PA.





**Do you know what possibilities of economy Crocker-Wheeler Motor-Drive holds for your plant?**

*We know of one plant that is now operating on the power originally wasted in friction.*

Your plant may have similar possibilities of economy. At any rate, wouldn't it pay you to find out?

A line to our nearest office puts us at your command.

## CROCKER-WHEELER CO.

Ampere, N. J., Birmingham, Boston, Chicago, Cleveland, Denver, Detroit, Newark, New Haven, New York, Philadelphia, Pittsburg, San Francisco, Syracuse.

LOCAL ADDRESSES AT: American Bldg., Charlotte N. C.; Tractor Terminal Bldg., Indianapolis, Ind.; Union Trust Bldg., Cincinnati, O.; 518 Tenth St., N. W., Washington, D. C.; Equitable Bldg., Baltimore, Md.

LOCAL SELLING REPRESENTATIVE: Tel-Electric Co., Houston, Texas.

## 50 TO 500 LIGHTS

This outfit will provide 50 to 500 lights in your factory, house, farm or barns, and power for driving any motors required. Possibly the cheapest and most reliable unit on the market.

Write us for prices.

**THE TRIUMPH ELECTRIC CO.**

CINCINNATI, OHIO



## Incandescent Lamps

Unexcelled for Life, Brilliancy or Uniformity

## Motors and Dynamos

WRITE FOR PRICES

**Kentucky Electrical Co., Inc., Owensboro, Ky.**

## MOLONEY TRANSFORMERS

MOLONEY ELECTRIC CO., ST. LOUIS, U. S. A.

WINDSOR ONT., CANADA.

## HEADQUARTERS

FOR ALL THINGS ELECTRICAL

At a Little Less Than You Pay Elsewhere Prompt Service

**LEE ELECTRIC COMPANY**

BALTIMORE, MD.

## Westinghouse Direct-Current Magnetic Switch Elevator Controllers

To suit various kinds of service these controllers are made in five classes, as follows:

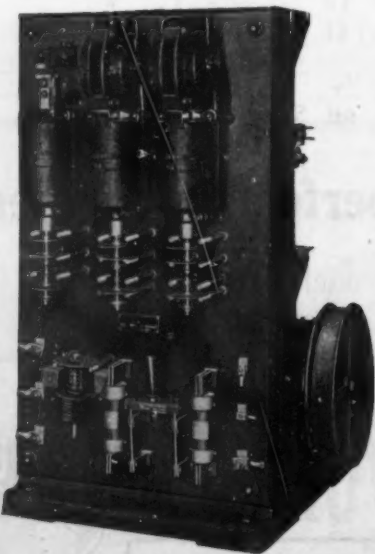
Class 1. Full-Magnetic, Two-Speed Controllers for High-Speed Passenger Service.

Class 2. Full Magnetic, Single-Speed Controllers for Passenger and Freight Service.

Class 5. Semi-Magnetic Controllers for Slow-Speed Freight Service.

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Class 4. Semi-Magnetic Controllers for Slow-Speed Passenger and Freight Service.



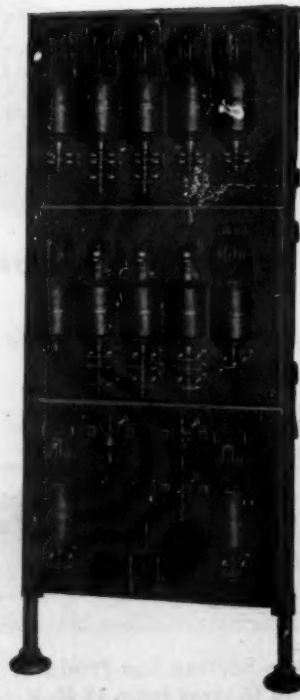
Semi-Magnetic Elevator Controller

The Full-Magnetic Controllers make all the connections necessary in starting and regulating the speed of the motor, by means of magnet switches that are controlled by the elevator car switch. The Semi-Magnetic Controllers have a mechanical starting and reversing switch, operated from the elevator by a hand rope or lever.

In both types the acceleration of the motor speed is effected automatically by means of the magnet switches.

The operator simply closes the operating circuit of the switches, the starting resistance is then cut out automatically in several steps in the shortest time consistent with safe and economical operation.

Ask nearest office for Descriptive Leaflet 2382



Full-Magnetic Elevator Controller

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### The "Chloride Accumulator"

furnished with the electric lighting plants of this company is exactly the same type of battery used by the large electric lighting companies, electric railways, telephone and telegraph companies, the U. S. Government, etc. It is the very highest grade of storage battery manufactured and will give an absolutely dependable service.

Information on storage batteries or on complete electric lighting plants can be secured by addressing the nearest Sales Office.

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1912

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It has done the work of from 3 to 30 horses and drivers and on hand work from 5 to 14 men. This truck has hauled 120 bales of cotton on trailers a distance of one-half mile in one hour at a cost of 40 cents (operator, charging, depreciation, etc.) A horse and trailer costing the same per hour can move but four bales the same distance. Thus the truck has done the work of 30 horses and trailers at one-thirtieth the cost.



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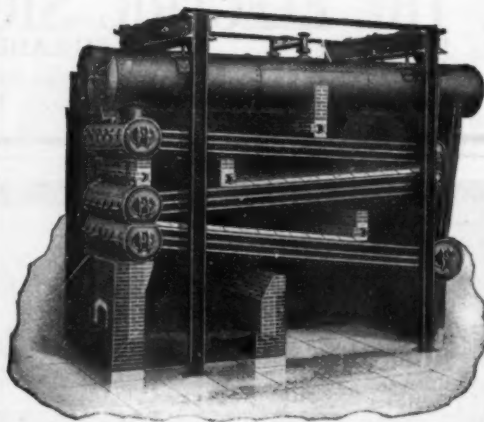
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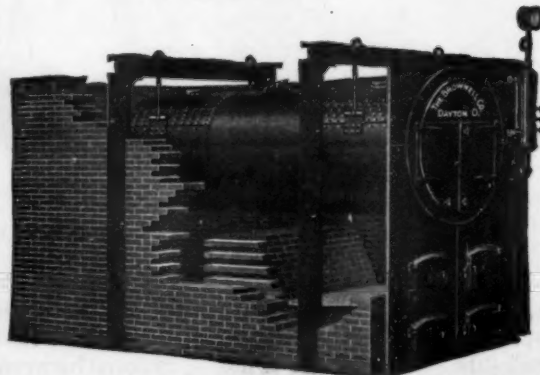
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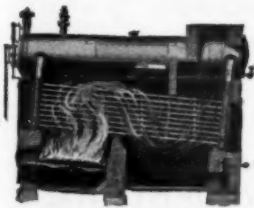
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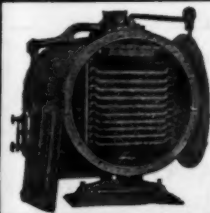
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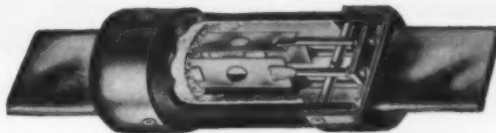
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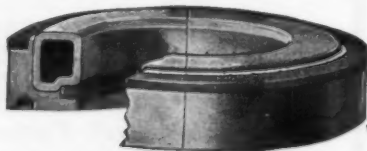
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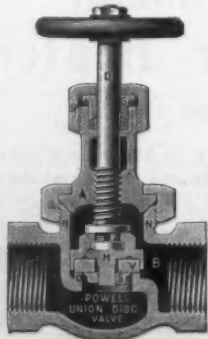
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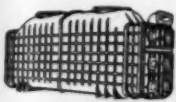
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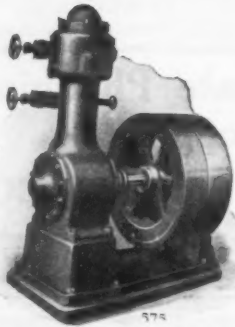
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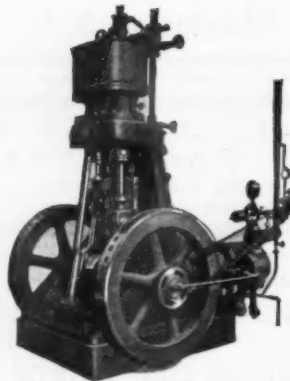
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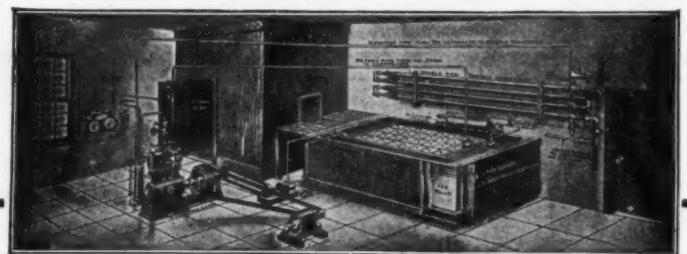
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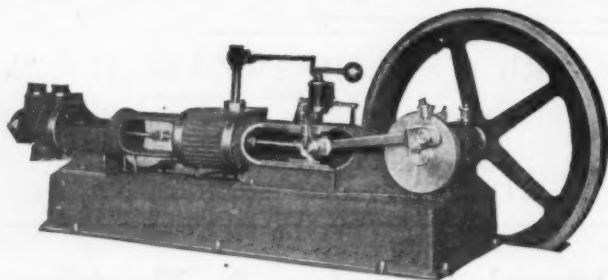


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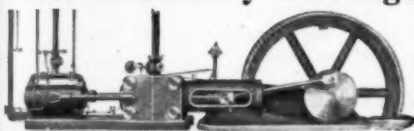
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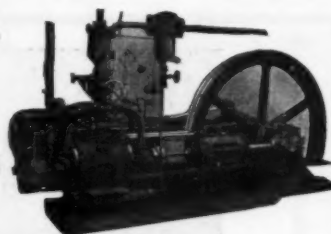
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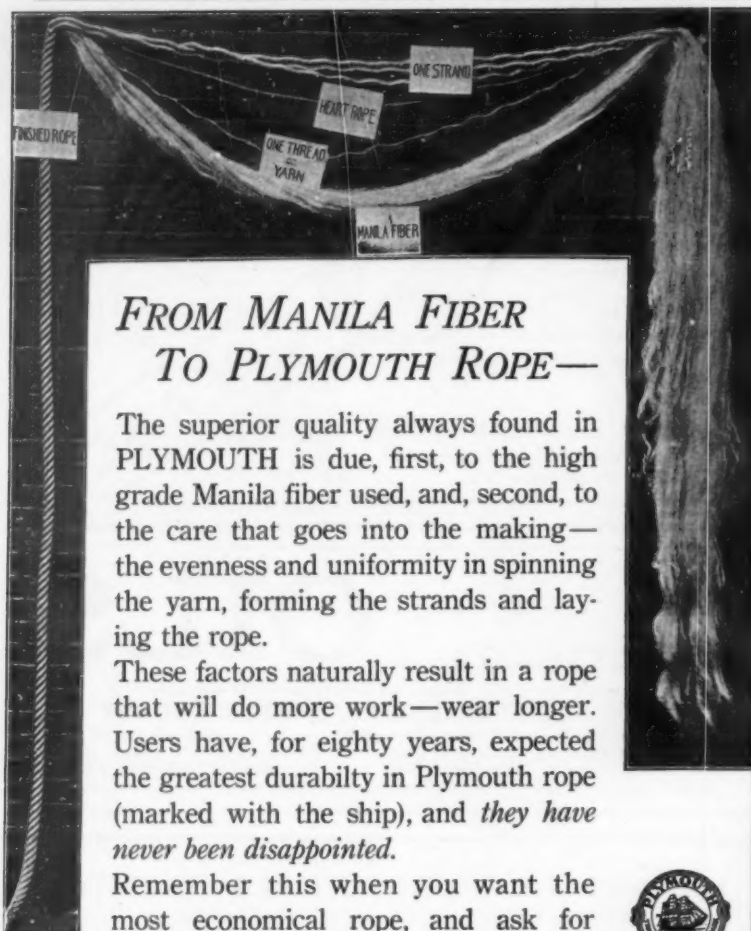
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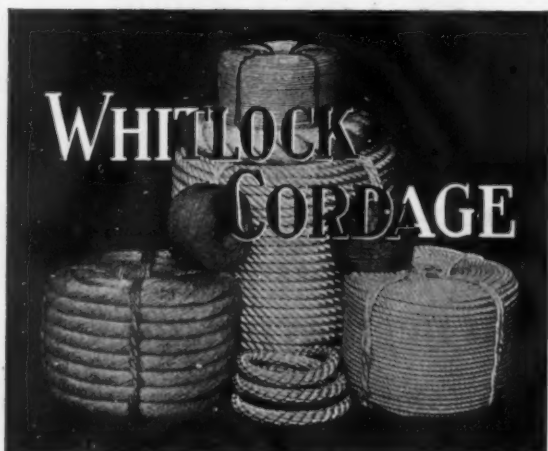
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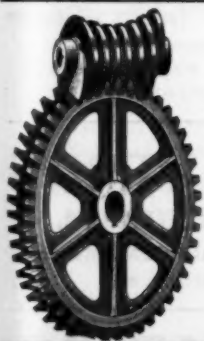
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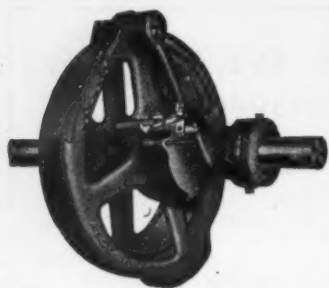
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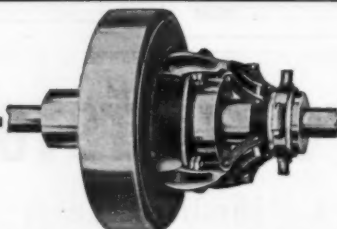
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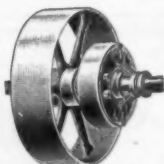
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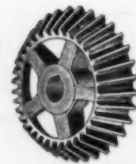
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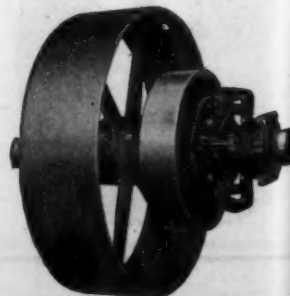
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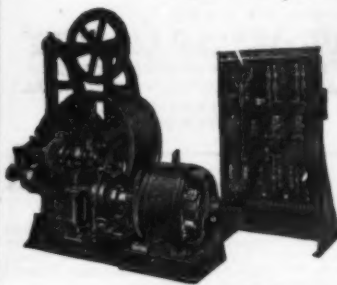
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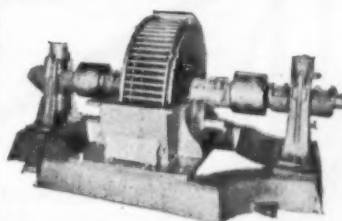
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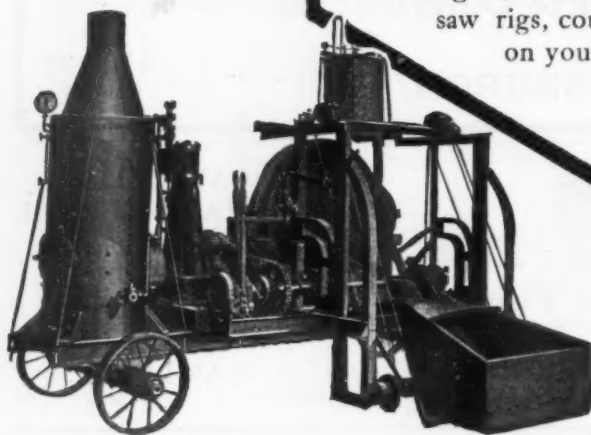
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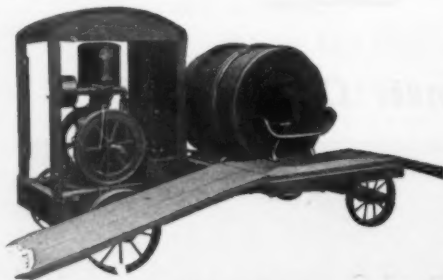
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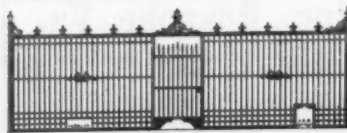
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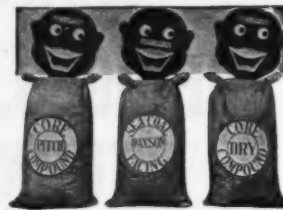
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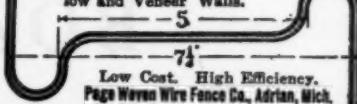
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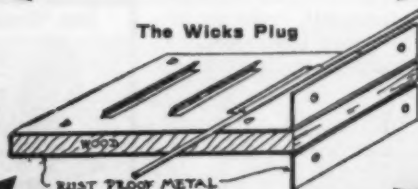
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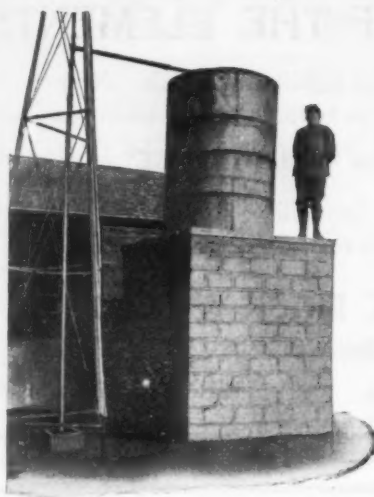


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


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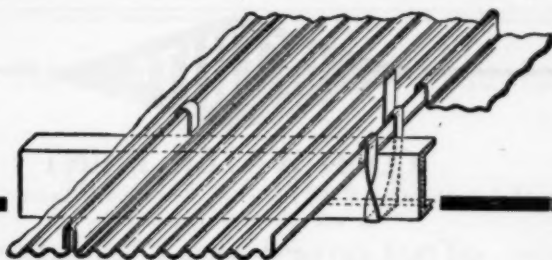
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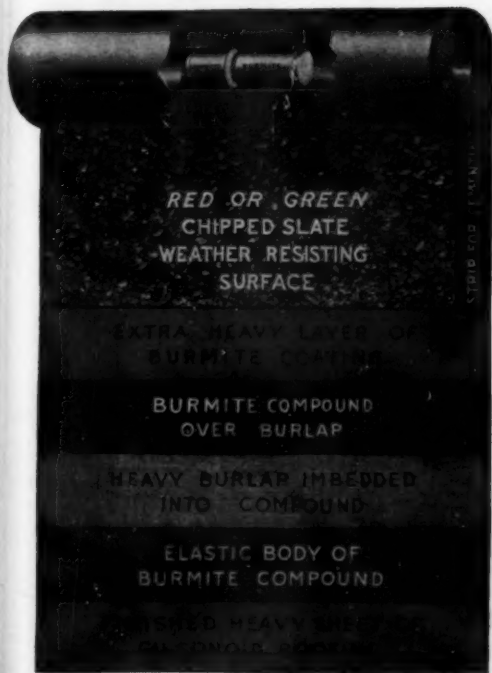
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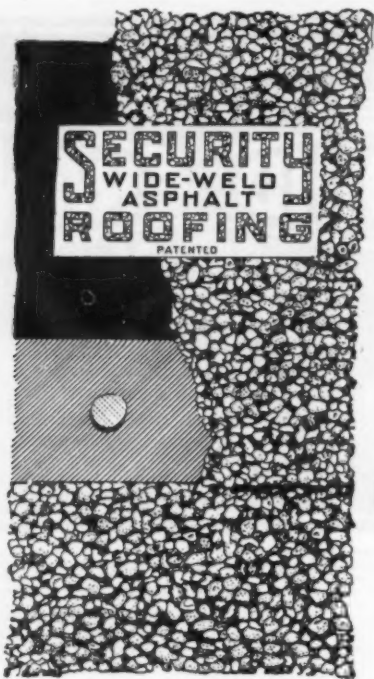
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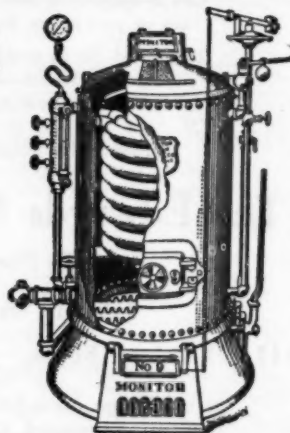
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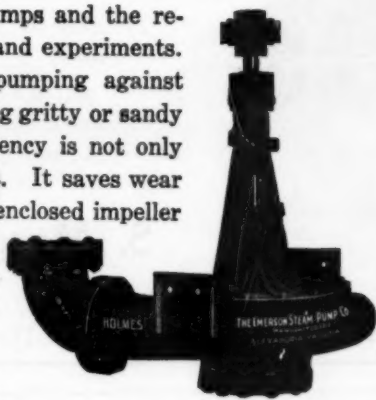
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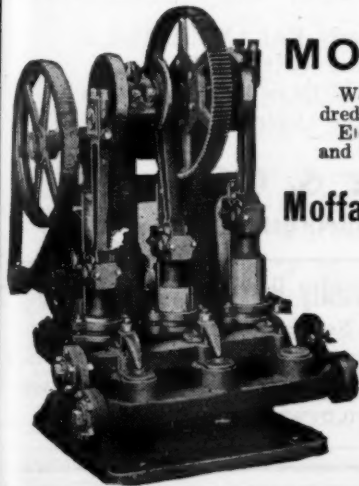
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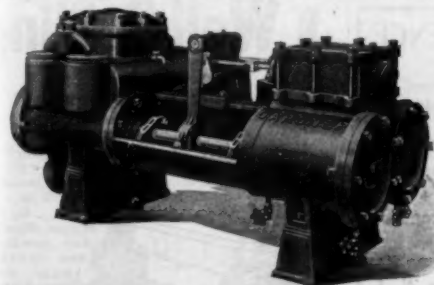
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IN NAME:

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To the poor, weary, sorely-tried Engineer, whose exhausted patience is well-nigh the breaking point over that miserable so-called PUMP GOVERNOR that doesn't govern; that invention of the nether region the REDUCING VALVE that doesn't reduce (or if it does, it is all reduction, no regulation); that contraption some fool calls a FLOAT VALVE; his BACK PRESSURE VALVE (that is very much back and no pressure); that NON-RETURN VALVE that has caused him many sleepless nights and endless days, returning to beat the band, cutting out an important boiler at a busy hour (when the boss wants steam) or at a critical moment when his own and his assistants' lives are at stake refusing to close, raising Cain and hammering like Sam Hill when it does try to move.

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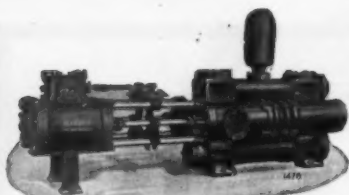
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Duplex Plunger Boiler Feeder.

We have produced several new lines of pump patterns, among them are heavy Boiler Feeders and Water Supply Pumps. Write for our Catalogue.

Steel Forged HYDRAULIC PUMPS  
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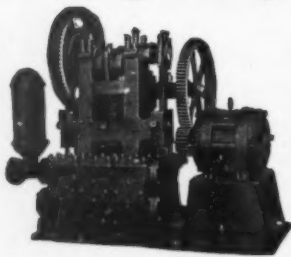
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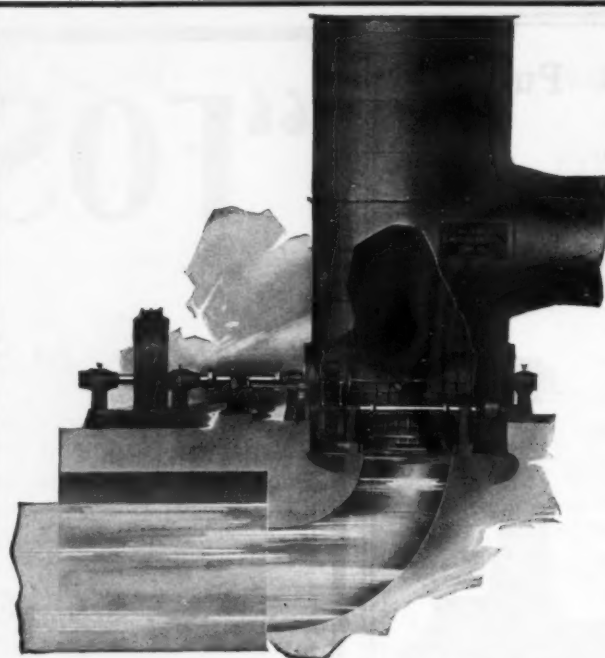
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Head Gate Hoists, Trash Rack, Sluice Gates, Steel Piping, Shafting and Bearings also furnished.

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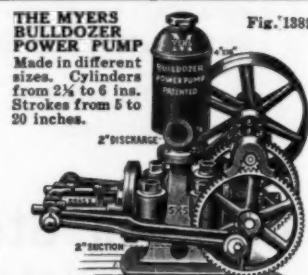
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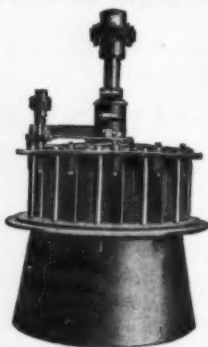
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THE MYERS BULLDOZER POWER PUMP  
Made in different sizes. Cylinders from 2 1/4 to 6 ins. Strokes from 5 to 20 inches.

Fig. 1389

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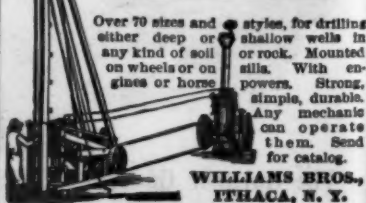
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Horizontal Plunger Pump  
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And this plunger type also has the well-known Cameron reliability and lasting efficiency.

Catalog No. 21 illustrates and describes all types of Cameron Pumps.  
Sent on request to interested pump users.

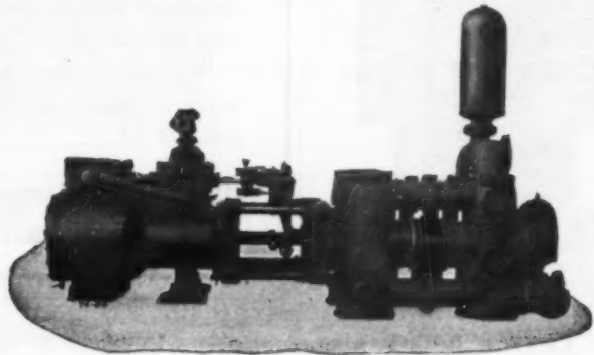
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Back of the design and construction of every Worthington Pump is a specialized knowledge of pumping conditions.



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WELL STRAINER

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Estimates furnished upon application.  
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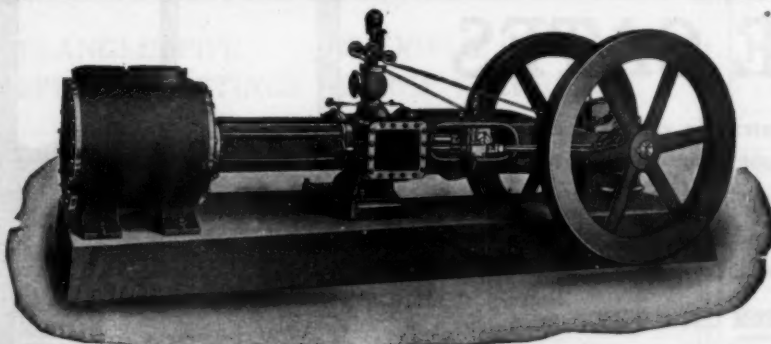


PAMPHLETS

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DUPLEX PUMPS

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The Blake-Knowles Center Crank Rotative Dry Vacuum Pump

## The Blake & Knowles Steam Pump Works

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Works: East Cambridge, Mass.

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All up-to-date sugar mills are installing this type of pump.

One of these pumps in your mill will insure Higher Vacuum, Smaller Steam Consumption, Lower Cost for Repairs and Maintenance and a More Elastic Condensing Outfit.

Our product covers the whole range of Sugar House pumping requirements, and an equipment of Blake-Knowles pumps means durable, dependable, modern machines, backed by the broadest guarantee.

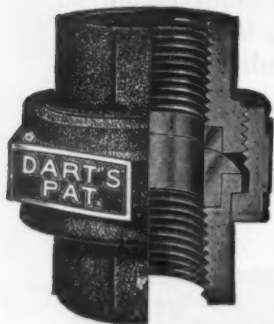
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B125.2

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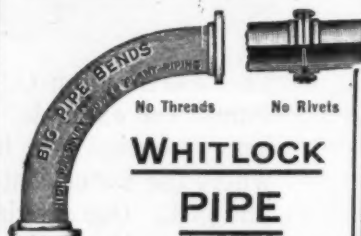


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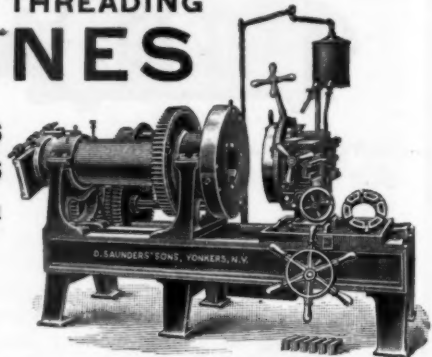
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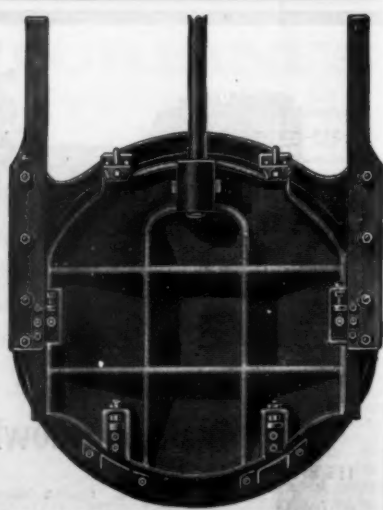
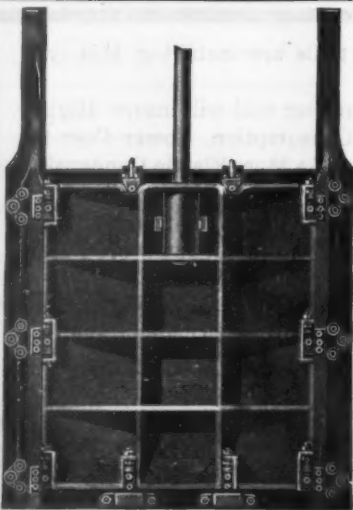
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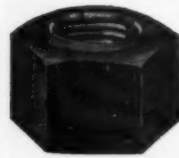
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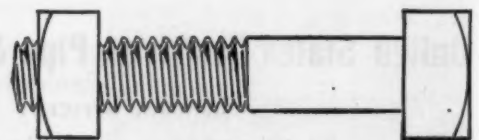
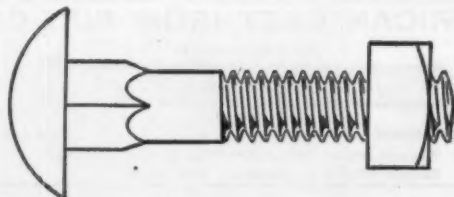
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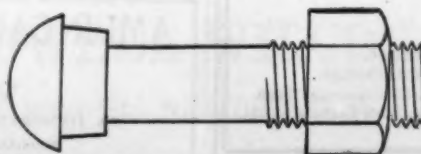
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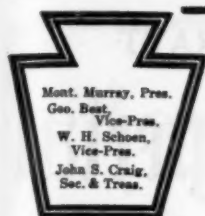
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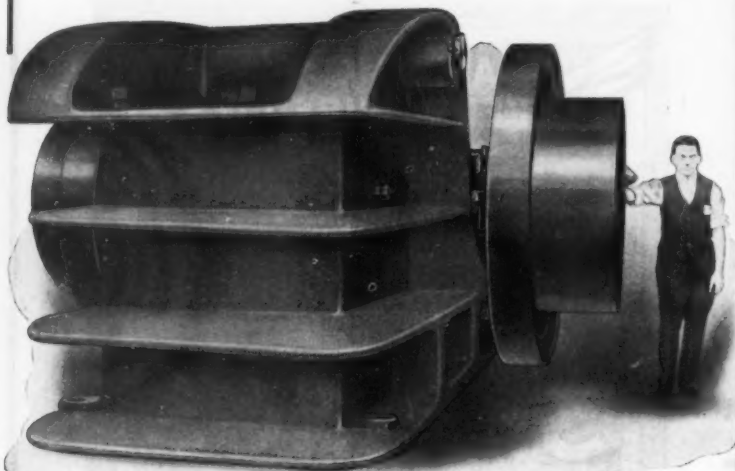
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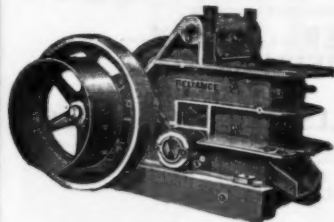
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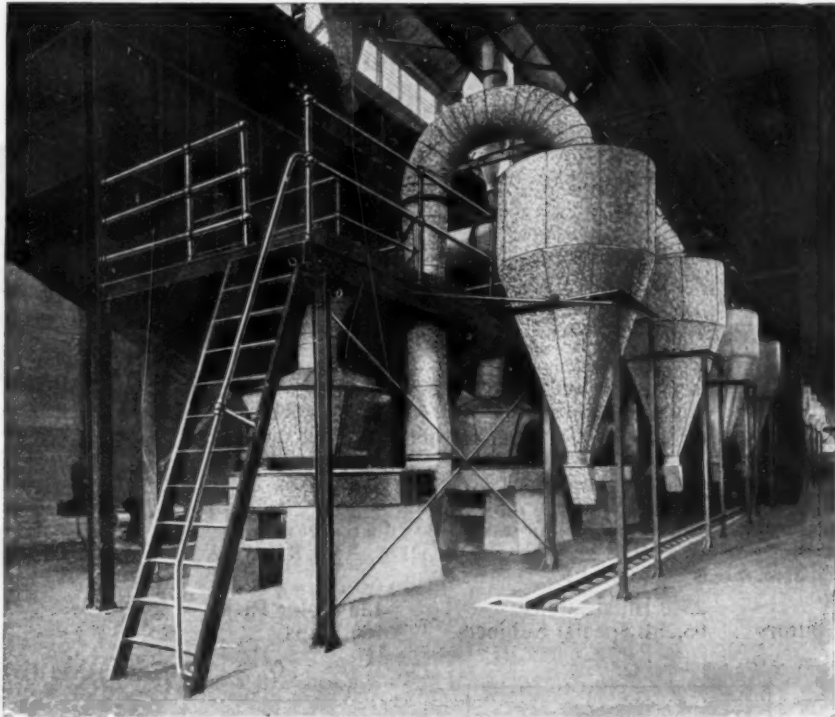
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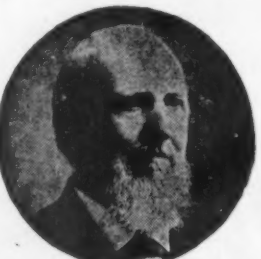
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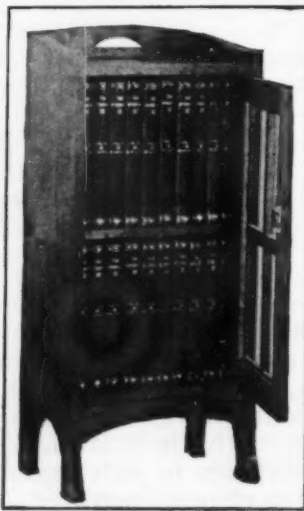
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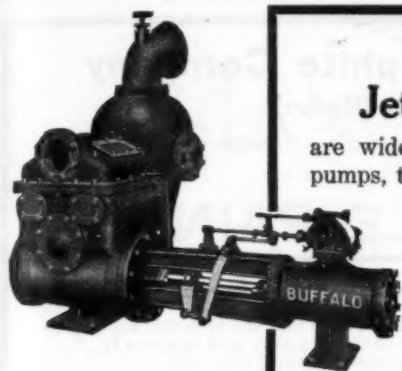
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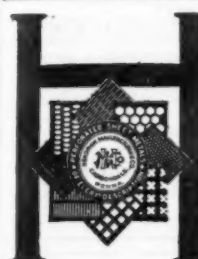
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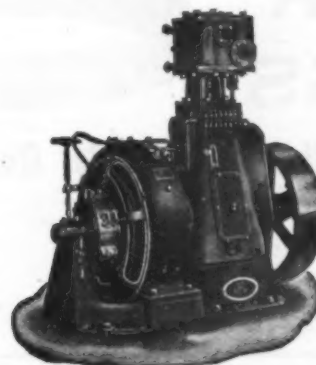
This department of the Manufacturers Record, as the name implies, is a collection of business opportunities of every description arranged in classified form for the convenience of our readers so that they can quickly locate any particular opportunity in which they may be interested, whether they are seeking a position, agent or employee, investments of various kinds such as city properties, timber and cut-over lands, mineral and coal lands, farming and fruit lands, new location for a factory or home, purchasers for industrial and properties of all kinds.

This department is a market place where buyer and seller, employer and employee, capitalist and those offering investments can meet to their mutual advantage and profit, and it will pay those who may or may not be interested to give these columns a close study each week on account of the large and constantly changing variety of opportunities published in this department.

See pages 80, 81 and 82 this week.

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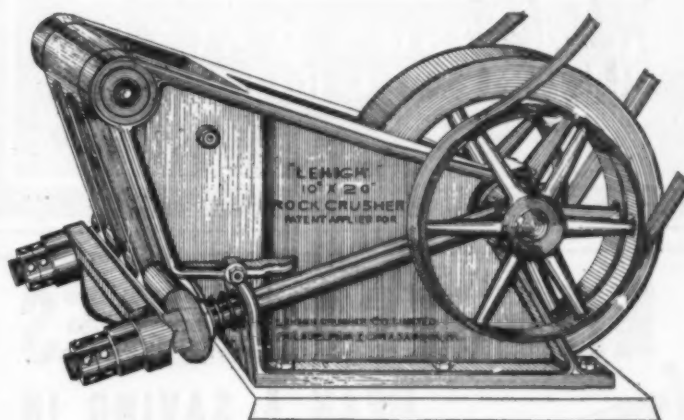
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"To me there is a fascination about steel interiors. It constantly emphasizes the absurdity of fire-fighting, for how can fires rage if they have nothing to feed upon?"  
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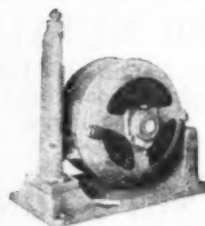
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# MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

Vol. LXI. No. 1.  
WEEKLY.

BALTIMORE, JANUARY 11, 1912

\$4.00 A YEAR.  
SINGLE COPIES, 15 CENTS.

## Manufacturers Record.

PUBLISHED EVERY THURSDAY BY THE  
MANUFACTURERS RECORD PUBLISHING CO.,  
BALTIMORE.

RICHARD H. EDMONDS, President.  
FRANK GOULD, Vice-President.  
VICTOR H. POWER, Treasurer.  
I. S. FIELD, Secretary.

RICHARD H. EDMONDS,  
Editor and General Manager.

EDWARD INGLE, Managing Editor.

ALBERT PHENIS,  
General Staff Correspondent.

### Branch Offices:

New York—52 Broadway.  
Boston—643 Old South Building.  
Chicago—1116 Fisher Building.  
St. Louis—543 Century Building.

Subscription, - - - - - \$4 a year  
(payable in advance) to United States,  
Mexico, Cuba, Porto Rico, Hawaii and  
the Philippines.

To Foreign Countries (including Canada) in  
the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as sec-  
ond-class matter.]

BALTIMORE, JANUARY 11, 1912.

### THE USES OF PEAT.

Reflecting the rapidly-increasing interest in the subject of the use of peat for fuel and other purposes is a letter of inquiry from Mr. J. M. Willson, Jr., of Kissimmee, Fla., who, writing to the MANUFACTURERS RECORD, says:

Near our town is a large body of peat, while the power now is derived from wood, which is getting more scarce each year and costing more.

Quite a comprehensive answer to inquiries of the kind is made in a bulletin by Charles A. Davis of the National Bureau of Mines at Washington embodying the results of his study of the uses of peat for fuel and other purposes. Mr. Davis discusses in some detail the proper value of peat and peat lands to agriculture, and the uses of peat as fertilizer, as an absorbent and disinfectant, as litter and bedding for stock, as insulating material, as stock food and packing material, and notes that in Florida the peat is burned to obtain ashes for making polishing powders and scouring soaps. But the greater portion of the bulletin deals with the use of peat for fuel. Its importance as such is indicated in the fact that in continental United States there are 11,188 square miles of land having peat deposits of good quality capable of yielding on an average 200 tons of salable fuel per acre for each foot of depth of the deposit, and that the total available fuel in these deposits will reach 12,888,500,000 tons, which, if converted into machine-peat bricks at \$3 a ton, would have a value of \$38,665,700,000. Mr. Davis also emphasizes the economic consideration in the fact that the regions where peat is most abundant, especially Florida, which is underlain by peat for practically its whole area, are

relatively remote from the coal fields. This point made in the bulletin, which is reproduced in part on another page of this issue of the MANUFACTURERS RECORD, suggests the rise of industries in Florida which have their materials close at hand, but which have heretofore been confronted by the lack of convenient fuel.

### TEN YEARS OF MINERAL PRODUCTION IN THE UNITED STATES.

In the first ten years of the present century the mines of the United States have produced to the value of \$16,401,864,848, included in the products being such primary manufactures as pig iron and articles made of clay. The production by years was as follows:

Years.	Value.
1901.....	\$1,141,856,971
1902.....	1,322,943,135
1903.....	1,489,676,328
1904.....	1,362,092,768
1905.....	1,624,580,557
1906.....	1,904,011,381
1907.....	2,071,613,741
1908.....	1,594,572,055
1909.....	1,886,772,843
1910.....	2,003,744,869
Total.....	\$16,401,864,848

In every one of the ten years there was a steady increase in values up to 1904, where the decrease reflected the depression of that year, but the next year there was an increase over 1903 of nearly \$135,000,000, and the production value rose to \$2,071,613,741 in 1907. Since then the mining industries have felt the effects of the financial disturbances of the winter of 1907-08, and though the value in 1910 for the second time went beyond the \$2,000,000,000 mark, it was still nearly \$68,000,000 less than that of 1907. The increase between 1900 and 1910 was from \$1,197,031,392 to \$2,003,744,869, or by \$806,713,477, equal to 80 per cent. The increase was \$172,440,023 greater than the actual production value of 1908, fourteen years ago, and more than twice as great as the actual production value of \$364,928,208 in 1890. The increases among productions have been in coal, from \$306,688,164 to \$629,557,021, or by \$322,868,857, equal to 105.3 per cent.; in pig iron, from \$259,944,000 to \$425,115,235, or by \$165,171,235, equal to 63.6 per cent.; in clay products, from \$96,212,345 to \$170,115,974, or by \$73,903,629, equal to 76.6 per cent.; in copper, from \$98,494,039 to \$137,180,257, or by \$38,686,218, equal to 39.3 per cent.; in petroleum, from \$75,980,313 to \$127,896,328, or by \$51,907,015, equal to 68.3 per cent.

As great have been the rates of increase in some of these products, such as coal, clay products, petroleum and pig iron, they have been less than those in the case of some other minerals, such as natural gas, increasing in value from \$23,698,674 to \$70,753,158, or by \$47,054,484, equal to 198.6 per cent.; cement, from \$13,283,581 to \$68,752,092, or by \$55,468,511, equal to 417.5 per cent.; zinc, from \$10,654,196 to \$27,367,

732, or by \$16,613,536, equal to 155.9 per cent., and in gypsum, asphalt, mineral paints, talc and soapstone, bauxite, feldspar, fluorspar, mica, fuller's earth and others, while the value of sulphur produced increased from \$88,100 to \$4,005,112, because of the development of the Louisiana deposits. The values in 1900 and 1910 are compared in the accompanying table.

### Increase in Mineral Production.

Mineral.	1910.	1900.
Coal.....	\$629,557,021	\$306,688,164
Pig-iron.....	425,115,235	259,944,000
Clay products.....	170,115,974	96,212,345
Copper.....	137,180,257	98,494,039
Petroleum.....	127,896,328	75,980,313
Gold.....	96,269,100	79,171,000
Stone.....	76,529,584	36,970,777
Natural gas.....	70,753,158	23,698,674
Cement.....	68,752,092	13,283,581
Lead.....	32,755,976	23,561,688
Silver.....	30,854,500	35,741,100
Zinc.....	27,367,732	10,654,196
Sand, molding, etc.....	19,520,919	.....
Lime.....	13,894,563	6,797,496
Phosphate rock.....	10,917,000	5,359,248
Aluminum.....	8,955,700	1,920,000
Salt.....	7,900,344	6,944,603
Gypsum.....	6,523,029	1,627,203
Mineral waters.....	6,357,590	6,245,172
Slate.....	6,236,759	4,240,466
Zinc oxide.....	5,325,636	3,667,210
Sulphur.....	4,005,112	88,100
Asphalt.....	3,060,067	415,958
Mineral paints.....	2,174,735	644,089
Glass sand.....	1,516,711	.....
Antimonial lead.....	1,338,090	.....
Borax.....	1,201,842	1,018,251
Sand-lime brick.....	1,169,153	.....
Pyrite.....	958,608	749,991
Quicksilver.....	958,153	1,302,596
Talc, soapstone.....	864,213	383,541
Tungsten ore.....	807,307	11,040
Grindstones.....	796,294	710,026
Talc, fibrous.....	728,180	499,500
Bauxite.....	716,258	89,676
Feldspar.....	502,453	180,971
Fluorspar.....	430,196	94,500
Graphite.....	377,176	197,579
Mica.....	337,097	147,969
Precious stones.....	295,797	233,170
Fuller's earth.....	293,709	67,535
Oilstones, etc.....	228,694	174,087
Quartz.....	193,757	86,351
Manganiferous ore.....	186,765	.....
Peat.....	140,209	.....
Infusorial earth, etc.....	130,006	24,307
Barytes.....	121,746	188,089
Abrasives garnet.....	113,574	123,475
Pumice.....	94,943	.....
Magnetite.....	74,658	19,333
Asbestos.....	68,357	16,310
Arsenic oxide.....	52,305	.....
Titanium ore.....	44,480	1,300
Bromine.....	41,684	140,790
Platinum.....	25,277	2,500
Tin.....	23,447	.....
Manganese ore.....	22,892	100,289
Corundum, etc.....	15,077	102,715
Thorium, etc.....	12,006	48,805
Chromic iron ore.....	7,229	1,409
Nickel.....	.....	3,886
Unspecified.....	300,000	1,000,000
Total.....	\$2,003,744,869	\$1,197,031,392

The combined values in 1910 of coal, pig iron, clay products, copper and petroleum, equal to \$1,480,864,815, were 74.4 per cent. of the total value of mineral production in the United States in that year. It is interesting to note that gold, which ranked sixth in value of production, was less by \$40,000,000 than the value of copper, and by \$73,000,000 than the value of clay products; that the value of stone was more than twice the value of silver, and that the value of natural gas was within \$5,233,000 of the value of the petroleum output of

1900. The value of coal was greater than the value of the total mineral production of 1892. Of the total 1910 production, \$1,242,701,402 represented minerals, \$700,743,467 metals and \$300,000 unspecified products.

### THE PACIFIC COAST WAY IN CONTRAST WITH THE SOUTH'S WAY.

Our newspaper friends over in Southern California have a peculiar method of handling the weather news. When there is a drop in the temperature in Florida, particularly South Florida, no matter how unimportant it may be, despite the fact that it does not the slightest damage to crops, the Los Angeles papers treat the news as a genuine first-page sensation. Not long ago, when there was a cold snap in this part of the State, doing no harm to fruit at all, the Los Angeles Times had a display head spread entirely across its first page and big type conveying the information, so worded as to give the impression that the citrus fruit of the State had been wiped out. A few days ago the temperature in the California citrus belt dropped to 19 above zero and great damage was inflicted. We scanned the Los Angeles Times most interestedly and searchingly to find the extent of the disaster, and—would you believe it?—there wasn't a single reference to the weather except in the official bulletin from the Weather Bureau, which was tucked away inconspicuously on one of the classified advertising pages.

So far as the California newspapers are concerned, there is never any cold weather in Southern California. But let the mercury in Florida drop a half-dozen degrees, and they scream out that an awful disaster has hit the Florida orange grower and obliterated his holdings from the map.—Tampa Tribune.

This pretty clearly shows the way in which the Pacific Coast always puts its best foot front, while we of the South are constantly doing the opposite. If the South gets a cold snap, it is widely heralded all over creation. On every possible occasion the "Georgia peach liar" gets in his work, the sensational space writer for Northern papers befools his own nest with the wildest exaggerations of every evil to such an extent that the fact that he is still permitted to live in his community is the strongest possible proof of the law-abiding qualities of Southern people. If Los Angeles was made the headquarters for such exaggerations against the Pacific Coast as the stuff constantly sent out from some Southern cities against the South, a vigilance committee would soon see that such correspondents found other camping grounds.

If the South raises too much cotton and thus breaks down the price, this is proclaimed all over creation, and the condition of Southern farmers is pictured as though they were marching double-quick to the poorhouse.

In reality, the South is brimful and running over with facts that are indeed sensational of progress and prosperity. No intelligent man can travel South without being amazed at the evidences of success of unusual character, of phenomenal profits, of advancing values, of city growth and country improvement. There is enough in Florida to talk about and write about to fill a dozen books, all sensational of splendid climate, of wonderful fruits, of mar-

velous results from trucking, from chicking-raising, and a thousand and one other things. The State fairly teems with limitless potentialities, and the very enmity of California papers shows how they realize these things. Of every other Southern State the same might be written. Their advantages are simply without end. Instead of concentrating all our thought upon these numberless blessings and forever singing about them, we fill our papers and our thoughts and our dispatches to Northern papers with every imaginable failure, with tales of every real or fancied evil, with elaboration of every disease and statements that we are too poor to combat sickness, and must, therefore, call upon philanthropists to do it for us; too poor to educate our own people, and must, therefore, conduct organized efforts to make the rich of other sections support our educational institutions; and we widely herald all these things through press dispatches and in editorials, from the pulpit and from the public platform. California pursues an opposite course, and heats us not by reason of superior advantages, but by the exercise of plain horse sense and self-respect.

#### COMPLIMENTS AND COIN.

"No region ever was so lavishly dowered by nature. Her physical resources, scarcely touched as yet, are practically inexhaustible. The most sparsely-populated portion of our country, it will one day be the most thickly settled. The least wealthy portion per capita, she bids fair ultimately to be among the wealthiest."

This is what Speaker Clark said of the South to New York's Southern Society a few evenings ago. It has a pleasing sound, yet the gorge of the editor of the *Spartanburg Herald* rises against it as he recalls Speaker Clark's vote to add 50 per cent. to the enormous pension burden already carried by the South without even the reward of seeing the loot spent within her borders. After getting a determined grip on the cuss words struggling for utterance, the *Herald's* editor permits himself to remark:

"All of the above we have heard before many a time, many a time. And all the years we have been hearing this the South has been giving of its wealth to make the North rich. Think what the South has paid in pensions for Union soldiers in the last 40 or 50 years. And scarcely a cent of this finds its way back to this 'wonderful region,' which has been able to sustain this strain and still grow rich. The South is indeed a wonderful region."

Let us be just to Speaker Clark. May he not persuade himself that to give the South the compliments and the North the pensions is both a fair and an acceptable division?—*Macon Telegraph*.

That is just about what many of our public men are constantly doing. A little story will illustrate the case. The late T. G. Bush of Birmingham, one of the great men of the South, great in character, great in business ability, great as a cultured Christian gentleman and a man of devotion to the best traditions of the politics of the Old South, some years ago appeared before a Congressional committee in behalf of securing a deeper harbor for Mobile. Mr. Bush pointed out the strategic location of Mobile and how enlarged commerce would be certain to follow the improvement of the harbor. One of the leading Northern members of the committee said: "Mr. Bush, we have been very much impressed by your statements, and would be willing to vote as you wish, but the members of your own party from your section are very much opposed to spending money for the betterment of any harbors where trade is not now sufficient to make this imperative. They say such expenditures are unconstitutional, and they are constantly holding up the Constitution

against us when we plan for such expenditures."

"You are quite correct," said Mr. Bush. "Our people are forever talking about the Constitution, while you Northern people are constantly striving to advance the business interests of your communities. The result is we have the Constitution and you have the wealth. For myself, I am willing to trade a little of our Constitution for your activity in getting financial results for your section."

That tells the story of a thousand similar things.

#### WEALTH IN WET LANDS.

The Norwegian Government maintains an organization for reclaiming marshes and swamp lands and developing the use of peat in manufacturing industries. According to United States Consul B. M. Rasmussen of Bergen, Norway, this society has during the past fifteen years converted 1157 acres of wet land in two counties into good, tillable fields at a cost of \$25,634, an average of a little more than \$22 an acre, and he estimates that an income of \$24,118 a year is derivable from the milk alone from the cows that this land will support. This reclamation note from across the water is an illustration of what the peoples of the older countries of the world are doing almost under compulsion to meet the necessities of an increasing population.

Such enterprises as that in Norway may seem trivial in connection with the reclamation work through drainage and irrigation, which is being pushed in a number of States in the South, notable the Carolinas, Georgia, Florida, Mississippi, Missouri, Arkansas, Texas and Louisiana, but they are none the less valuable in suggestion of the wisdom of the policy pursued in the South in advance of pressing necessity. Reclamation in the South means not only quick returns to the investors in it in the shape of an increase in the value of lands from \$5 or less an acre to \$100 and more an acre, and in the productivity of the soil from nothing to \$400 and \$500 an acre, but also a far broader benefit in the increased attractiveness of the South and in a vast addition to its natural resources. Because these are so vast, even without the expenditure of a dollar upon an irrigation plant, a drainage project, forest planting, river improvement or other increased facility, is not the slightest reason in the world why every available dollar should not be invested in these lines of Southern upbuilding. Because an acre of land in the South is producing \$40, or even \$60 an acre, in cotton or 30 bushels of corn is no reason why its capabilities of producing \$100 worth of cotton or 100 bushels of corn should not be utilized. The country has only begun to realize the loss that has come to it in not utilizing commercially the many wastes in its industrial and agricultural life. But there have already been many striking demonstrations in the packing-house industry, in the petroleum trade, in cottonseed crushing, in lumbering and in other operations, as well as in intensive farming, of the importance of looking after all wastes and turning them to the best account. Land reclamation is one of the most potent factors in encouraging the movement in all lines, and the South has more than 50,000,000 acres of wet lands to be reclaimed.

#### CONSTRUCTION ACTIVITIES FOR 1911.

More than 55,000 items relating to new industrial enterprises and improvements to established plants, the erection of various public buildings and dwellings, with other diversified phases of progressive developments in the South, were published by the Construction Department of the MANUFACTURERS RECORD during 1911. This shows a gain of more than 5500 over the previous year of 1910, when the same department published 49,705 similar items, and is a telling illustration following up our article of January 4 on "The South's Optimistic Outlook for the Coming Year." As that article was in the main a general comment on the manifestations of the near future's material progress along lines of vast importance, including agricultural and land-reclamation developments, railroad, water-power and electric extensions, ship-channel and waterways construction, mineral and iron-working projects, with a host of factory and building operations, etc., so these items are concrete illustrations of the fact that, despite the drawbacks of the year, progress has really been very great.

The items referred to—numbering exactly 55,250—are briefly summarized in the following table:

Total of items from January 1 to December 31, 1911.....55,250

January.....	3,814
February.....	4,408
March.....	5,074
April.....	4,841
May.....	5,688
June.....	5,214
July.....	4,774
August.....	4,841
September.....	4,457
October.....	4,576
November.....	5,698
December.....	4,065

These items were divided as follows:  
Construction.....45,689  
Machinery, Proposals and Supplies Wanted.....7,199  
Burned, etc.....2,362

Items for the year, divided in detail, were as follows:

Bridges, Culverts, Viaducts.....	339
Canning and Packing Plants.....	261
Clayworking Plants.....	214
Coal Mines and Coke Ovens.....	479
Concrete and Cement Plants.....	94
Cotton Compresses and Gins.....	428
Cottonseed-oil Mills.....	174
Drainage and Irrigation.....	346
Electric Plants.....	1,018
Fertilizer Factories.....	249
Flour, Feed and Meal Mills.....	192
Foundry and Machine Plants.....	577
Gas and Oil Developments.....	577
Ice and Cold-storage Plants.....	526
Iron and Steel Plants.....	78
Land Developments.....	1,301
Lumber Manufacturing.....	1,135
Metal-working Plants.....	108
Mining.....	568
Miscellaneous Construction.....	558
Miscellaneous Enterprises.....	1,387
Miscellaneous Factories.....	2,812
Motors and Garages (previous to October included under other headings).....	163
Railway Shops, Terminals, Round-houses, etc.....	167
Road and Street Work.....	2,736
Sewer Construction.....	1,039
Telephone Systems.....	454
Textile Mills.....	422
Water-power Developments.....	144
Water-works.....	1,550
Woodworking Plants.....	700

Railways.....	2,604
Street.....	390

Buildings.....	758
Apartment-houses.....	623
Association and Fraternal.....	1,333
Bank and Office.....	1,429
Churches.....	943
City and County.....	376
Courthouses.....	5,013
Dwellings.....	464
Government and State.....	988
Hotels.....	1,282
Miscellaneous.....	567
Railway Stations.....	2,778
Schools.....	2,957
Stores.....	391
Theaters.....	811
Warehouses.....	2,362

Burned, etc.....	2,362
Machinery, Proposals and Supplies Wanted.....	7,199

Total.....55,250

Within the year the Machinery, Proposals and Supplies Wanted columns contained 300 inquiries relative to machinery and other manufactured products, etc., these having come from subscribers and readers in Canada, Porto Rico, Mexico, Cuba, Argentine, Brazil, Chile, Colombia, Bolivia, Venezuela, Honduras, Hawaii, Australia, England, France, Holland, Belgium, Spain, Germany, Roumania, Italy, Sweden, Greece, Russia, Japan, Turkey, The Levant, Egypt, India, East Siberia and North Africa.

Every such item is of vast interest to the alert reader of the Construction Pages, which appear every business day in the *Daily Bulletin*, and also weekly in the MANUFACTURERS RECORD. Like a serial story, the close of one day's publication leaves one on the qui vive for the next. Especially is this true of the many large—and some smaller—developments where plans mature conservatively or gradually, and we note the various stages of progress, from beginning to completion, or from announced contemplation until plans are completed, contracts awarded and machinery or materials purchased. The mention of these plans presents opportunities to the engineer and designer; the announcement of prospective bids affords to builders and contractors early chance for estimates; statements regarding progressive stages of plant and factory development give to machinery and equipment manufacturers information of invaluable interest relative to needed machinery and supplies, while the manufacturers of or dealers in furniture, elevators, interior decorations, etc., are made aware of opportunities for their business by a close watching of the Building News Columns, with their varied descriptions of new and enlarged structures of all kinds and importance, from the sky-scraping office building or many-roomed hotel to the stately church edifice or the quiet dwelling.

It is interesting to note that a large proportion of the increase in number of items published by us is found in the Building Columns, where, for instance, we enumerated in 1911 several hundred more schoolhouses, stores, miscellaneous structures and dwellings than our records for 1910 show; there has been an increase in the number of Government, municipal and county buildings completed, progressing or planned; also somewhat of an increase as to the remainder of the list of buildings as we classify them, these including apartment-houses, association and fraternal structures, churches, hotels, railway stations, theaters and warehouses.

Southern industrial activities, which included great land and timber operations, also drainage and irrigation, have, during the year, been noted under nearly 3000 items, about one-half of these relating distinctly to the development of lands for farms, orchards, new residential sections, towns, etc., cotton raising and general agricultural purposes; the South's progressive road and street work has claimed 2736 brief notices; 1039 items were given to construction of sewers; water-works in various cities were noted in 1550 items; electric plants, 1018; steam and street railways, 2604 and 390, respectively; 939 bridge and culvert items, etc.; 700 woodworking; cotton compresses and Gins, 428; with yet thousands of items devoted to concise and detailed descriptions of other equally important developments and enterprises. All these our table represents in simplest outline, because "many pages of the MANUFACTURERS RECORD would be required to give the merest details of the industrial and other developmental enterprises that have been undertaken in the South in the past twelve months." But hundreds of pages have been used within that same twelve months to furnish our readers just these details, keeping many workers busy and involving many thousands of letters and telegrams. Much of our Construction De-



partment work is based on the free use of the telegraph.

Many letters coming to the MANUFACTURERS RECORD from more distant points than the South bring definite requests for information on American manufactures and materials, with a view to purchases or representation. These letters from foreign subscribers and readers were the sources of 300 of the 7199 items mentioned on our Machinery, Proposals and Supplies Wanted pages during the year. The requests came from nearby Canada and Southern America; also from further-off Europe, Asia, Africa and the Islands of the Seas. Like the main number of such notices in Machinery, Proposals and Supplies Wanted columns, every one of these "Wants" represents a specific request for data or prices on machinery or equipment, material or supplies. Seven thousand one hundred and ninety-nine such requests means as many opportunities for sales, contracts or labor.

Reviewing it all as a whole, a great array of business opportunities is presented, which seems absolutely bewildering. But this simplifies when looked at from the viewpoint of the prepared man and specialist who is ready to seize his opportunity. Here are investments for the capitalists; a market for the wares of the manufacturer and dealer; places for the designer and the engineer; contracts for the builder, and wages for the laborer.

The new year promises to yield a still greater harvest of information.

#### FEDERAL AID FOR ROADS.

John A. Stewart, president of the International League for Highway Improvement and chairman of the League of Good Roads Associations, takes a recently-voiced opposition of President Taft to national appropriations for building good roads as the text for a timely warning against a policy that may impede the progress of the splendid campaign underway for road improvement. Mr. Stewart is quoted in the New York Sun as follows:

The stand taken by President Taft with regard to Government aid for road building is the only stand that any man can take who does not want to see this country embark on such an adventure of national expenditure as will make the outgo for pensions seem trivial.

It is calculated by engineers of high standing that for the Government to build 10 per cent. of the roads that need rebuilding or improvement would cost over \$2,500,000,000. To build an adequate system of roads for the United States would cost at least \$25,000,000,000. There can be no doubt whatever that a direct tax would be necessary in order to carry out any scheme of Government aid, nor is there any doubt that such direct tax would have to be levied at a constantly increasing ratio.

It is true, as the President said, that to build one or two trunk lines would not ruin the country, and to do so is well within our means. But the man who looks at this matter in the light of the inside past history of the pork-barrel propositions of public buildings and river and harbor improvements must foresee such a pressure brought to bear upon Representatives in Congress by their respective districts as will compel the construction of pork barrels which will compare with former pork barrels as a gill measure with a hoghead.

As president of the International League I freely acknowledge the right of road construction and other interests to organize and to advocate national aid for road building, but by the same token I believe that it is in the interests of the taxpayer and the average man to oppose this movement for Government aid, and as a counter move to try to secure from all good-roads interests and organizations advocacy of and support for some proposition looking to some governmental interest in the good-roads movement that will not mean at this juncture any appropriation for the building of good roads.

#### A WONDERFUL STORY OF THE

#### SOUTH'S WONDERFUL UPBUILDING AND PROSPECTS.

"Thirty Years of Southern Progress," to be issued on the thirtieth anniversary of the founding of the MANUFACTURERS RECORD, will broadly and comprehensively cover the whole story of the South's progress since 1880 in such a way as to make it an invaluable publication for all time to come. Henceforth in this country and abroad, in libraries, in great business houses, in colleges and universities, it will be accepted as the one complete work of reference as to what the South has achieved in material progress, and as to its resources in soil, minerals and timber for the upbuilding of the future.

A number of the foremost experts of the United States, including many members of the United States Geological Survey, have written articles of thrilling interest as to the resources of the South and what their utilization will mean in the development of industrial, agricultural and railroad interests. The comprehensive reports of these Government experts and those of others of equal standing will give to "Thirty Years of Southern Upbuilding" an authoritative character which will make it the highest work of reference in existence about the South, what it has, what it has done and what it will achieve in the future. The subject is a great one of world-wide interest, for the whole business world is beginning to get a glimpse of the predestined future of the South as the dominating section of the country, which in industry, in agriculture, in commerce and finance is destined to dominate the world. Great as is the subject, the handling is worthy of it and worthy of the men who have written these articles.

Statistically the story of the South will be so comprehensive and so graphically presented as to set a new mark for all statistical work for the future.

This publication will be issued as Part 2 of the MANUFACTURERS RECORD of February 22. In order to give it the widest possible circulation for the benefit of the South, and thus of the country, the price has been made so low that everybody can get it. The price will be 50 cents in paper cover, \$1.25 in cloth and \$2 in leather. Printed in the usual book type and form, it would make a volume of about 1000 pages or more. To every regular subscriber of the MANUFACTURERS RECORD a paper-bound copy will be sent without extra cost.

Every man South, North or West who desires to be informed about his country should have a copy for his library as well as one for his office. And every man and every business concern desirous of advancing the progress of the South, increasing its prosperity and attracting capital and men to this section should order at least a few copies to send to correspondents, friends or customers in other sections. Every railroad should distribute thousands of copies in the North and West and in Europe, and should see that every one of its stockholders has a copy, that the South may be the better understood by the investors of the country. The time is ripe for such work, and this publication will carry universal conviction wherever it is read. Orders for copies should be sent in at once, and all orders for less than 10 copies must be accompanied by check.

By reason of the large circulation and permanent character of "Thirty Years of Southern Upbuilding," the space allotted to advertising will be exceptionally valuable. Orders for advertising space must be received prior to January 31, and we cannot now guarantee to accept any as late as that date.

One great trouble with our scheme of State division is that there lacks any community of interest in the States in such public works as road building. There should be a co-ordination and correlation of all the various State schemes through an initiative taken by the National Government, at whose expense a national survey should be made as the basis upon which should be planned road building among the States.

Organization for road improvement is already so effective that it ought to be possible to bring about such co-operation among State authorities that co-ordination and correlation of all the various State schemes could be had without a national survey under Federal auspices. Such a survey would almost certainly be made a precedent for other activities on the part of the Federal Government in road building.

Improved highways are essentially undertakings of the States, for the States and by the States, and there is nothing about them involving a pretext for participation in them by the Federal Government. On the other hand, there is good reason to believe that the energies and enthusiasm now displayed in expenditures of nearly \$150,000,000 a year upon good roads in the several States would be checked by an attempt to turn the minds of men to the thought of having the Federal Government engage in the work for the States. Money from the Federal treasury expended in

that way would not be taken from the air, a notion more or less vaguely fixed in many minds in the country, but from the pockets of the taxpayers, and the burden of this taxation would fall most heavily upon the individuals least able to bear it. It would increase unnecessarily the taxes now levied by the Federal Government at a time when there is urgency for a reduction of such taxes.

The improvement of rivers and harbors by the Federal Government is specifically provided for in the Constitution, and rightly so, as affecting directly more than one State. So, too, in the case of navigable streams being included in the projects, the Government may be justified in participating in irrigation and drainage, just as the establishment of a forest reserve guarding the headsprings of navigable streams is within the province of the Federal Government, but there is nothing in that fact calling for Government drainage and irrigation by the whole sale. Indeed, rank injustice is done to private interests that have expended time and money upon reclamation work in the Government's entering the field, and it has no more right to put water upon private arid land or take it from private wet lands than it has to go into the business of competing with private

fertilizer manufacturers in supplying fertilizers to farmers.

There has already been too much stretching of the power of the Government in the work of improvement that belongs to State or individual enterprise, and instead of creating new precedents in the way of Government building of good roads, the people of the country should mass themselves upon the delimitation of the precedents, which have increased at an alarming rate ever since the primary precedent was set fifty odd years ago, when the Government entered the field of education.

#### BOON IN PACKING-HOUSES.

Conservatively estimated, there are 2,000,000 hogs in South Georgia today that with adequate facilities would be converted into \$25,000,000 to \$30,000,000 in money, and there are not facilities enough in the State to convert them into 5 per cent. of that amount. Every Western State making any pretense to agriculture has from \$15,000,000 to \$100,000,000 invested in packing-houses and facilities for making the most economical use of live-stock and its products. Georgia has practically nothing.

Those statements are the heart of a strong practical argument by L. L. Gibson in the *Daily Telegraph* of Macon, Ga., in advocacy of the establishment in that city of a packing plant. He says that Georgia is sending away every year \$75,000,000 for meat, and he appeals to financiers, wholesale grocers, agricultural implement men, farmers and others to consider the profitable wisdom in the packing-plant idea as an important factor in encouraging live-stock raising, in keeping millions of money in the State and in increasing the value of farms. He contrasts two Georgia counties—Bulloch, in which the farmers produce practically everything they use, raised 28,000 bales of cotton last year, and at the end of the season had more than a million dollars on deposit in banks, and Burke, where little beside cotton is grown, and where the farmers raised 35,000 bales and had less than half a million dollars in bank—as a suggestion of the difference between confining attention to the raising of one principal crop and so distributing agricultural energies as to assure the situation aptly described as "living at home." This diversification has been furthered wherever the packing-house has been established in the South, whether in Kentucky, Tennessee, Texas, Mississippi or Oklahoma, because the packing-house becomes at once a ready market for live-stock, and the raising of live-stock involves the raising of other crops than cotton, which, sold in the form of live-stock, bring better returns than cotton. Moreover, the money that is sent out of a State by cotton-growers to pay for supplies that they could raise at home is just so much added to the cost of making the cotton crop, and so much to be deducted from the returns of the crop. Buying supplies reduces the profits in cotton-growing and practically the ultimate price per pound received by the grower. Raising supplies at home tends to reduce the size of the cotton crop, and consequently to maintain the price per pound at a reasonable plane. Investment of money in packing-houses at suitable locations will undoubtedly result in handsome dividends, but the greater benefit will come to those who raise material for the packing-houses or engage in the supplementary diversification of crops.

#### UPBUILDING THE SOUTH.

Mr. Ellis B. Cooper, an attorney-at-law, of Hattiesburg, Miss., so highly appreciates the MANUFACTURERS RECORD

ord, as all good lawyers should do, that he sends us his check for a year's subscription to be sent to a friend with his compliments. If every man in the South who realizes the value of the MANUFACTURERS RECORD to his own business interests as well as to the South at large would undertake to present a year's subscription to some friend in the South or in other sections, he would be rendering his friend and the South a great favor. The more widely the MANUFACTURERS RECORD can be circulated, the greater will be its work in behalf of the upbuilding of the South.

#### COTTON FACTS.

The thousands of men in this country and in other lands interested in all phases of cotton growing, cotton selling and cotton manufacturing who for 25 years have found to be indispensable the annual publication, "Cotton Facts," published by Col. Alfred B. Shepperson of New York, will welcome the announcement in the 1911 edition of the fact that the family of Colonel Shepperson will continue its publication. The current edition bears the marks of the work done upon it by Colonel Shepperson before death overtook him last fall, and all the well-known features of the publication upon which he bestowed such conscientious labors are maintained and brought up to date. Of special interest are the general review of the 1910-11 season and the prospects for 1911-12, and articles on cotton futures, New York as a cotton market, cotton cultivation and manufacture in China, progress of cotton manufacturing in Europe, United States and India since 1901, the work of the Mexican cotton boll-weevil in the cotton fields, Egyptian and Peruvian cotton, and cotton manufacture in Japan. All the statistics covering practically the world history of cotton growing and cotton manufacturing appear as usual in their completeness.

#### THE COTTON MOVEMENT.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight during the first four months of the present season was 9,494,172 bales, an increase over the same period last year of 131,360 bales. The exports were 5,163,447 bales, an increase of 802,157 bales. The takings were, by Northern spinners, 1,087,509 bales, a decrease of 189,500 bales; by Southern spinners, 1,051,829 bales, an increase of 67,750 bales. During the 127 days of the season the amount brought into sight was 9,859,502 bales, an increase of 1,294,861 bales. The exports were 5,478,215 bales, an increase of 945,568 bales. The takings were, by Northern spinners, 1,145,979 bales, a decrease of 165,654 bales; by Southern spinners, 1,112,856 bales, an increase of 85,390 bales.

#### Wants to Locate Cement Plant.

The Rosland Development Co., Empire Building, Birmingham, now developing Rosland City, in Fayette county, writes to the MANUFACTURERS RECORD as follows:

"We wish to make an offer to reliable parties to build a Portland cement works at our town. We have a deposit of fossil stone and white clay which will make pure white Portland cement. We have the natural gas to burn and grind it, and two reliable chemists and cement engineers say we can make a high-grade white Portland cement for 15 cents per barrel. We are prepared to make a very liberal offer to any company or individual who will either build the plant or finance a company to manufacture Portland cement on our property."

#### PURIFICATION OF SEWAGE.

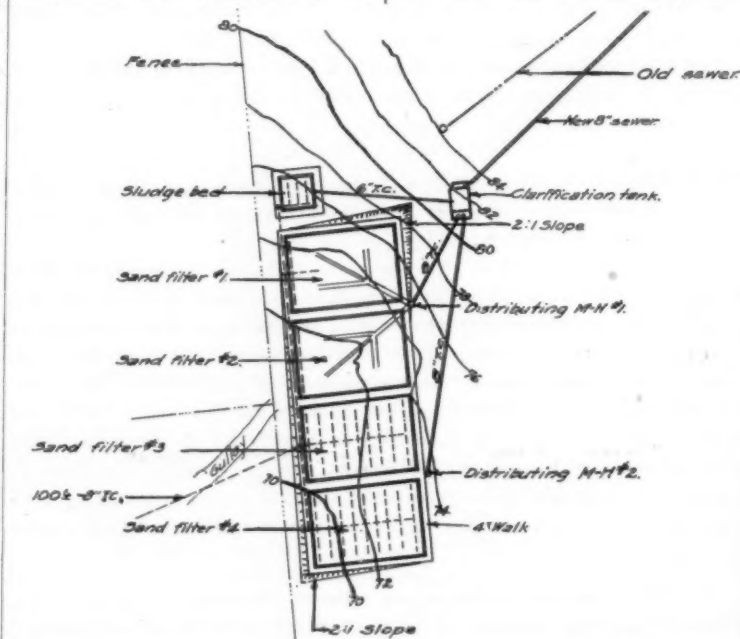
##### Modern Plant Under Construction at Maryland Agricultural College.

The recent meeting in Baltimore of the National Association for Preventing the Pollution of Rivers and Waterways has aided in directing attention to the growing importance of sewage purification works and the remarkably beneficial results which may be obtained by the general adoption of such improvements.

Chief Engineer Calvin W. Hendrick of the Baltimore Sewerage Commission, whose work has attracted world-wide attention, is president of the association. Its object is to encourage the study of the pollution of rivers and other waterways in the United States and to gather information bearing on its prevention; to awaken public interest therein, so as to bring national and State legislative and executive bodies as well as the general public to a realization of the importance of the question and of the means by which present conditions may be largely overcome.

Brigadier-General Torney, United States Army, stated at the meeting that the War

Department has recently taken a stand against water pollution and has been building disposal plants, including a model one at Fort Sheridan, Ill.; Surgeon-General C. F. Stokes, United States Navy, also stated that a sewage-disposal plant is being built at the naval training station near Chicago. Similar work in other States was mentioned by various speakers. Four papers were prepared for the meeting, and will be printed in the Proceedings of the Association.



SEWAGE DISPOSAL PLANT AT MARYLAND AGRICULTURAL COLLEGE.

In presenting this important subject to its readers the MANUFACTURERS RECORD has previously made extended references to the great disposal plant for Baltimore, and has given an illustrated description of a small disposal plant at New Wilmington, Pa.

In this connection the disposal plant being installed at the Maryland Agricultural College, College Park, Md., is interesting. The accompanying drawing shows the construction of the plant as planned under the direction of Chief Engineer Calvin W. Hendrick.

The plant displaces the subsurface irrigation system previously in use, and which had begun to give much trouble owing to the limited reliability of the system. The plant is designed for a population of 250, and a daily flow of 35,000 gallons of sewage is provided for. An interesting feature of this subject is that disposal plants may be advantageously con-

structed for small communities, individual manufacturing plants, etc., as well as for large cities. On account of the location of the college, a disposal system capable of delivering a highly purified effluent, clear, odorless and well oxygenated is required. In the light of recent agitation and progress in sanitary matters, brought about by the activities of many State boards of health, and the intense feeling that has manifested itself on all sides against the pollution of our inland streams, the responsible authorities of the Maryland Agricultural College have considered the question of the disposal of its sewage in an intelligent and broad way, and have thus set an example for other communities and institutions to follow.

The system shown in the drawing includes distributing sand filters for purifying the fluid, instead of the spraying beds used in the great Baltimore disposal plant. The sewage is conveyed in eight-inch vitrified sewer pipe, with hemp gaskets and cement mortar joints, to the clarification tank. This tank is 17 feet deep by 12

A siphon chamber, with automatic alternating Miller siphons, is provided to receive the effluent from this clarification tank. This is capable of holding three hours' flow, so that the filters may be dosed intermittently and automatically with the fluid from the tank once every three hours.

The final treatment consists of filtering this effluent from the settling tank through the beds of sand and gravel. Four separate beds are provided for this, as shown in the drawing, the total area amounting to .2 of an acre. Distributing troughs convey the effluent over the area of these beds. The bottom of the beds is carefully graded and underdrained with parallel lines of three-inch drain tile with open joint, which collect and carry off the liquid as it passes through the filters. These underdrains also provide ventilation for the beds and keep the pores of the filter supplied with the necessary oxygen.

The process which the sewage passes through in order to be delivered to a small creek in a clear, odorless condition is essentially biological, the sewage remaining in the pores of the sand filter for a sufficient time in the presence of air and the necessary bacteria which become established in the grains of sand and on the surface of the gravel and stone beds. These bacteria attack and destroy the undesirable bacteria in the effluent, so that the putrescible organic matter is converted into stable nitrates.

All possible sedimentation is made in the grit chamber and clarification tank, so that the effluent which passes to these filter beds is free from solids. This sediment is removed from the bottom of the settling or clarification tank to a small sludge bed composed of sand on which the sludge is dried out. The residue, after the action which has taken place in the clarification tank, is simply an inorganic humus and can be disposed of without any resulting disadvantage or nuisance on open farm land. For this reason the dried humus is raked up from the sludge bed and is easily removed.

This sanitary and economical means of disposing of the sewage for a population of 250 persons was estimated to cost \$2500 for material and work, exclusive of surveys, designs, cost of land and engineering services. The expense of operating such a plant is small, it only requiring one man for a few hours at considerable intervals of time, so that a man otherwise engaged can divert a small part of his time to caring for the disposal plant. The comparative simplicity and small initial cost of effective sewage disposal plants for either small or large populations is such that it may be generally adopted throughout the country as successful plants in operation are observed and the knowledge of such successful results is fully disseminated.

#### To Develop Talc Property.

The Fort Mountain Talc Co. of Georgia will develop 400 acres of talc property near Chatsworth, Ga. It proposes to have a daily capacity of 30 tons of talc and 100 gross of crayons. It will install a 30-horse-power water-wheel, a pulverizer and a set of saws, and prices are wanted on this machinery. The company's main office is at 20 Broadway, New York, Clark H. Abbott, manager, being in charge.

#### To Build Blau Gas Plant.

The Southern Blau Gas Co. of Louisville has been organized, and its treasurer, H. G. Garrett of Winchester, Ky., wires the MANUFACTURERS RECORD as follows: "Proposed plant to be six unit; brick and steel; cost about \$200,000, including building, machinery and equipment. Our plans have not yet been completed."



# Key West Girding Her Loins For Industrial Progress.

[Special Correspondence Manufacturers Record.]

Key West, Fla., January 6.

As told by the MANUFACTURERS RECORD in its last issue, the necessary concrete work is done, most of the steel is laid, and January 22 is announced officially as the date upon which the "Over-Sea" railroad will run its first through train into Key West, marking the consummation of one of the greatest pieces of railroad construction ever accomplished.

Key West is rising grandly to greet the opportunities the completion of the road will open up to her. To work off the first ebullition of joy the leading business men and public-spirited citizens are preparing for a two weeks' celebration, beginning on the day of the arrival of the first train, the like of which has never been held in any city of the same size. First and foremost, Henry M. Flagler will be here to witness the culmination of years of desire on his part, to enjoy the fulfillment of a long-cherished dream. He will be the lion of the occasion; the plaudits of the multitude will be his. A dozen or so foreign countries will send portions of their fighting fleets to foregather in the harbor and salute in proper style the newly-risen star in the firmament of progressive municipalities. Members of the Naval, Military and Foreign Affairs Committees of the National House of Representatives will be on hand to take what note they can of the effect the completion of the new extension is likely to have upon matters coming under their particular jurisdiction. Some hundreds, or perhaps thousands, of others will be present also, just as miscellaneous hundreds and thousands attend other celebrations, merely to be there and see what is going on and for the joy of telling about it afterwards. A circus has been engaged to come from Cuba for the occasion to help entertain visitors and home folks; bands will play, rockets will glare and flags will wave, and all and singular those acts and taings will be done and performed that serve to show joy for the fact and appreciation for the man whose courage and optimism, joined to his great wealth, brought the railroad into being.

This celebration, however, while it will serve to tickle the fancy of the more frivolous of the citizens, and to attract the attention of the outside world, by no means expresses the appreciation of the more serious-minded of Key West for what the advent of the railroad means to them and to their island, nor does it furnish adequate indication of the preparation already under way for the new era it will usher in. An awakening of the enterprise has come to the city, and it is finding expression in the same manner in which the same spirit speaks in other towns. One of these is an extensive system of improved streets. Bonds to the amount of \$192,000 have been issued, and from the proceeds 60 squares of brick street and eight of asphalt block will be laid. Then as the abutting property-owners and the street-railway company pay their portion of the cost the money will be spent in paving other streets, and so on until, almost before the people are aware of it, they will have excellent streets throughout the entire city. The bricks used are the Baltimore paver kind, and 5,000,000 of them have been contracted for. They are being delivered by sailing vessels straight from the Monumental City.

The matter of laying first-class brick streets here is rather simple after the bricks have been secured. The entire island is a block of stone, with a thin

vener of earth scattered over it, and thus needs but a little grading, a few inches of sand for the bed, the brick properly laid, a slush of cement to fill the crevices, and there you are, with a solid brick and cement pavement resting on a solid rock base.

Just ahead of the street paving goes the work of laying gas mains. A company has secured the franchise for using the streets for its pipe line to supply the city with gas, and is carrying on this work the while it builds its plant. In a short time it will begin to deliver its product throughout the city. It will spend \$400,000 in plant and piping. Gas will mean a great deal to the people here. At present practically everybody cooks with gasoline or oil and lights with electricity. A few hotels, boarding-houses and restaurants use wood in their stoves—probably nobody in all Key West uses coal for cooking purposes. As for heat, no fuel is required to furnish that. The sun is the island's sole dependence, and he is always on the job.

Another thing that shows the spirit animating at least a portion of the citizenship is a park proposition that has been pending for some time, and which is likely to be consummated by the time this letter gets into type. A development company owning a considerable tract of land on the island made an offer to sell the city a plot of ground for a park for the sum of \$50,000, bidding itself to turn the entire sum over to trustees who will spend it in securing new manufacturing plants for the city, more specially additional cigar factories. The city some time ago voted a bond issue for the purpose of securing grounds for a park, so there is no trouble on that score, and it would seem to the casual observer that there should be none on any score. Of course, however, opposition has developed, for there are always those who would rather their community should miss getting a good thing than that anybody should reap a benefit at the same time, and the opposition here is based on the ground that the company making the offer would benefit by an increase in the value of its remaining holdings. And, as usual, the opposition comes from those who own no property and pay no taxes. It is said that practically every man who pays taxes on any considerable amount of property is in favor of the proposition. These phases of the matter are mentioned simply to show that human nature is about the same away down here on the outskirts of the United States as it is right up in the middle of things.

The chief industry at Key West at present is the manufacture of high-grade cigars, and this is carried on to an extent that calls for a weekly payroll of from \$50,000 to \$75,000, probably an average of \$60,000 throughout the entire year. Years ago Cuban cigarmakers began coming here to escape Spanish oppression, and as they did not know how to do anything else, they began making cigars from tobacco shipped over from Cuba. It seems that the tobacco from which the best cigars are made is sensitive to climatic changes, even after being cut and cured, and that it should be protected from severe cold until worked up. It is also necessary that it be kept in an atmosphere and moisture Key West more nearly approximates Cuban conditions than any other spot in the United States, being in both respects almost exactly like the na-

tive land of the smoke-weed. Therefore the cigarmaking business was added to from time to time, the grades of cigars were kept to a high standard, and in time the quantity of the output reached large proportions and the quality came to be recognized by smokers everywhere as the best. Of late years, owing to labor disputes that disrupted the business here, many factories have sprung up in Tampa and Key West has lost the primacy which for so long a time she held undisputed. But the reputation for quality has never departed from her, and it is fully expected that the renewed activity to follow the coming of the railroad will restore her ancient supremacy in the matter of quantity.

Even as matters now stand, the cigar manufacturing business alone creates a big payroll in proportion to the population. There are about 20,000 people here, and \$60,000 means \$3 weekly for every man, woman and child on the island—\$15 a week for each family, taking five as the average. Of course, everything eaten and worn here is brought from elsewhere—everything but fish, which forms a large proportion of the food of the average family. The money for fish is paid out to citizens of Key West, and to that extent is kept at home. But in spite of the fact that practically everything must be brought in from other places, living expenses are comparatively light in Key West because of the economy in the two very important items of heat and clothing. The only fuel necessary is that required for cooking; the same clothing serves for all seasons—spring, summer, autumn, winter. Rents also are low, because the cost of construction of houses is comparatively small, owing to the fact that no provision is necessary for keeping warm.

Sponge fishing was formerly carried on here to a very large extent, and brought many thousands of dollars to the island annually. A few years ago, however, a large number of Greeks, fishing out of Tarpon Springs, brought the price of sponges to so low a figure that the industry was almost abandoned here. These Greeks sent divers down for the sponges, and were thus able to gather them so much more rapidly and cheaply that the old-style fishers could not compete. But the greed of the Greeks has worked the downfall of their business, for the divers, in walking about over the beds encased in their heavy diving suits, have trampled to death so many of the young sponges that they have about destroyed the producing capacity of the grounds whereon they worked. A revival in sponging is, therefore, regarded here as one of the certainties of the immediate future.

A cigar-box factory that has been in operation for several months gives employment to a number of workers and adds its quota to the general prosperity. It has proved a success from the start, having its market right at hand, and reaping advantage from the saving in freight that was formerly paid to bring the boxes from New York, whence they were practically all shipped to supply the local demand.

Another interesting and successful manufacturing plant is employed in making turtle soup and putting it up in cans for the market. The turtles are caught in the waters of this vicinity in large numbers and brought here for butchering. The soup is made by experts, is pure and well cared for, and there is a demand for it greater than can be filled. The industry gives employment to a considerable number of persons, who make good wages, and is the means of bringing quite a large amount of money to the island each year.

Fishing is carried on to a considerable extent both for the purpose of supplying the home market and for shipping to

Cuba. Many varieties of the best fish abound in the waters, and even with hook and line, the implements used by practically all the fishers, those who follow the business with judgment and industry can make good wages. The marketing of the fish at the docks where the boats come in daily is one of the most interesting things to be observed on this most interesting island.

Just now the money put in circulation by these various industries is largely supplemented by the payroll of the Florida East Coast Railroad, which is paying out many thousands for work done on the terminals and docks in the city, and along the line of the extension on the nearby keys. The gas company is also paying out large amounts for labor, other large sums are being paid for work on the streets, and the Hennibique Company of Philadelphia, which has the contract for building a large quay for the Government, is distributing a great deal among its working force. The Government itself makes a large addition to the general fund in the payment of those employed at the naval station, with its coaling station and light-house supply annexes, in the custom-house, where a steadily-increasing force is employed; in the branch of the revenue cutter service which is maintained here, to the company of coast artillery stationed here, in the branches of the postoffice, judiciary, health and immigration departments, all of which are represented in the city. So Key West has now, as things stand, a very large payroll in proportion to the number of people resident here, and could get along fairly well without anything else to bring in money.

But the people of Key West have no notion of standing still either as to population or money. They expect the impetus given by the acquisition of rail communication with the other sections of the United States to carry the city far along toward the hundred thousand mark by the time the next census period arrives, and to correspondingly increase its power and importance in the industrial and commercial world. Nor do their claims sound vain or visionary to the visitor who views the situation of their island and studies surrounding conditions.

In the judgment of the keenest business men of the country the opening of the Panama Canal will many times multiply the business now being done between the United States and the countries to the south, as well as bring about a tremendous steamship traffic between the two oceans thus joined together. Great steamers plying between the canal and the centers of population on the east and west coasts will bring all points from coastal Mexico to Colombia into such intimate relation with the United States that journeys from New York to the canal will become quite as common as from New York to Liverpool. But with those who make these journeys, and all the lesser journeys in between, time will be the most important consideration, and the hours that can be saved by taking rail to or from Key West, as the case may be, will make this the thoroughfare for a large majority of these travelers. For the past several years the small steamships running three times a week from Knights Key to Havana have carried 15,000 persons annually from the former to the latter place. The completion of the road to this place and the putting in commission passenger steamships of large size and great speed will undoubtedly largely increase that travel, and that increased number will be small as compared with the many, many thousands who will pass this way on the route to the hundred other ports to the south. Now a large passenger traffic through a given place, even though none of it stops makes



a great deal of business and leaves a large amount of money in passing.

In addition to these passing throngs there will unquestionably be a large number of tourists come to enjoy the mild winters and escape from the rigorous chill of their Northern homes. As written before, Mr. Flagler has announced the intention to build a big hotel here, and it is expected by Key Westers that it will be one of the most popular in his entire chain. The trip over the "ocean-going" railroad will prove an attraction to many, and to others will appeal the novelty of a winter spent on a small coraline island, the home of old romance, the farthest end of the land of enchantment which Florida has long been to those who have not seen it, as well as those who have.

The mails, express and rush freight that will be here transferred from railroad to steamship and from steamship to railroad must in the course of a very short time become enormous. Lying on the direct route from between Northern and Southern lands, with a harbor so situated that vessels can turn from the roadstead and inside of an hour begin discharging cargo at the mighty wharves to be provided by the railroad, Key West enjoys an advantage that neither size nor importance nor effort can overcome in favor of any other South Atlantic port.

With respect to industrial opportunities the outlook is particularly bright, and the citizens evince a determination to take full advantage of them. Knowing the possibilities of the cigarmaking business, they are naturally partial to that, and their first efforts under new conditions will be turned to securing more cigar factories. They think also that there is a good opening here for the manufacture of cigarettes on a large scale. It is thought that the turtle-soup business is susceptible of considerable increase, giving employment to many more people and adding to the general prosperity of the community, and there is no question of a revival in the sponge trade.

As for general fishing, it can be asserted with confidence that it presents opportunities for profit not duplicated elsewhere on the Atlantic coast. All kinds of fish native to Southern waters are found within easy reach of this city, and most of them in the greatest abundance. The Spanish mackerel, favorite in the markets of the North, and always in demand at good prices, makes its home in these waters in such quantities that it is caught by the ton wherever the effort is properly made. From other places in Florida the mackerel are shipped by thousands of tons annually, but nowhere are they so plentiful as among the keys that lie near Key West. At Miami a number of houses are engaged in shipping mackerel, yet the Miami fishing boats come 150 miles from home to fish within 30 miles of Key West. Here, then, is the natural point for a great fishing business, giving employment to hundreds of fishermen at remunerative wages. It is not the Spanish mackerel alone, however, that offers great possibilities for profitable fishing. The king fish, the barracuda, the red snapper—scores of varieties can be secured by the ton. It has been suggested that such varieties as the king fish would lend themselves readily to canning, and that a paying business might be built up along that line.

The situation of Key West with regard to South America suggests that it would be an excellent place for manufacturing the valuable woods in which that country's virgin forests abound into furniture and other finished products for the markets of the North. On some of the nearby keys ligum vitae grows, and also other varieties of timber that could be profitably worked into numerous valuable forms.

The thousands of tons of sea shells easily procurable about this and the other keys suggest a button manufacturing industry that would doubtless prove profitable.

These are the things that are so entirely obvious that they make themselves plain to the most casual visitor. Others suggest themselves to the man who gives the matter a little deeper study. One of these is a great sugar refinery. With the establishment of a mighty seagoing ferry, with which the Flagler railroad is to be supplemented, it will be easy to pick up trainloads of raw sugar alongside the Cuban fields and deliver to a refinery here without the cost of extra handling. After going through the refining process the sugar would again take car and be distributed to the various markets throughout the country without the necessity of being carried on a long route to some other distributing center, with attendant multiplicity of handling. "How about fuel?" you ask. Coal from the mines of Alabama and oil from the wells of Texas can be brought here direct by water. In few places outside the points of production can fuel be delivered more easily or more cheaply. "Then how about the water?" you inquire. Mr. Flagler long ago declared his intention to bring to Key West a supply of fresh water from the mainland. It will be a long way to pipe it—more than 100 miles—but money will do it, and when the pipe line is laid you may depend upon its being large enough to meet any demand that will be made upon it. One of the things in mind in its laying will be the sugar refining business. Not only does Cuban raw sugar lie easily to hand, as well as that from other Caribbean points, but there is a large undeveloped section of the State of Florida that is expected by those who have studied the question to become a great producer of sugar in the not remote future, from whose plantations the raw product would naturally come here for refining. There can be no question of the fact that Key West will be a bidder for the sugar refining industry.

Being nearer Central and South American countries, Cuba and the West Indies than any other United States port, Key West presents excellent opportunities for the establishment of jobbing houses in various lines of trade to do business with those countries, and for branch houses to distribute the products of manufacturing plants, notably those engaged in manufacturing machinery and agricultural implements.

The Government is making large additions to its military and naval properties here. At present there is but one company of coast artillery at Fort Taylor, but \$100,000 has recently been spent in securing additional ground for military purposes, and \$60,000 more is asked to complete the purchase of a sufficient amount to carry out the plans of the War Department. The intention is to make this a ten company post, with necessary barracks, officers' quarters, hospital, accommodations for quartermaster's and commissary stores and all other things needful in caring for 1000 or 1200 men. The strategic importance of this point in case of a foreign war is too well recognized for the Government to neglect its safety, for hundreds of vessels could gather in the harbor here, under protection of Fort Taylor's guns, and be safe from any naval force any country might send against them.

Nor are the naval authorities any less mindful of Key West's importance. The grounds of the naval station are to be extended by building a long seawall of concrete piling far out in the water, and filling it in with mud pumped up from the bottom of the harbor. The officers' quarters are to be increased in size and scope

and the grounds will be ornamented by laying out walks and planting trees, flowers and shrubbery until it will rival, if not surpass, in beauty any other naval station in the country. The naval force is to be increased also, and if present plans are carried out the importance of Key West's naval establishment will rival that of its military affairs. The station is now under command of Rear-Admiral Lucien Young, hero of the Huron affair and one of the most distinguished officers in the navy, with a remarkable record for personal bravery, and around whose entire career clings a glamor of romance that makes him one of the most attractive personalities in the country's service.

All things considered, there is probably no place in all the world to which the new year brings brighter prospects for prosperity than to the "mistress of the Southern seas;" "Cayo Huesá—sunny, fair Key West." GEO. BYRNE.

### IRON ORE IN 1911.

#### Estimated Production According to United States Geological Survey.

Preliminary estimates of iron ore sold in 1911 were sent to the Geological Survey by 26 of the largest iron-mining companies in the United States at the close of the year. The combined output of these companies represents more than 80 per cent. of the total production of the United States. From these returns it is estimated by E. F. Burchard of the Survey that the total quantity of iron ore marketed in the United States in 1911, not including stocks left at the mines, was between 43,000,000 and 46,000,000 long tons. This quantity represents a decrease of 22 to 24 per cent. of the sales for 1910, which aggregated 56,889,734 long tons. The output for 1910 was the largest quantity of iron ore ever marketed in a single year in the United States, and according to the present estimate the quantity produced in the year 1911 will take fifth place, being exceeded by that of 1910, 1907, 1909 and 1906 in the order named. It is estimated that of the ore produced in 1911, between 39,250,000 and 42,000,000 long tons was red hematite, the remainder consisting of brown hematite, magnetite and iron carbonate ores. According to the returns received, the Lake Superior district, in Minnesota, Michigan and Wisconsin, apparently produced between 33,000,000 and 35,000,000 long tons of red and specular hematite, which represents a decrease of 23 to 28 per cent. compared with the production of 1910—46,323,743 long tons.

In the Birmingham district, Alabama, the second largest iron-mining center, the production of iron ore apparently decreased 13 to 20 per cent. from that of 1910, the estimated production for 1911 being between 3,050,000 and 3,125,000 long tons, compared with 3,802,115 long tons in the preceding year. The ore mined in the Birmingham district consists of red and brown hematite in the proportion of about 4 to 1.

The production of iron ore in Tennessee and Virginia apparently decreased only about 16 per cent., according to reports from the principal producers in those States.

As the production of pig-iron for 1911 may exceed 23,500,000 tons, a larger production of iron ore might appear to be required than has been estimated above, but it must be considered that at the close of 1910 there was 9,408,235 long tons of iron ore in stock at the mines in the United States, and that of this total 8,471,108 long tons was at the mines in the Lake Superior district. Just how heavily this surplus stock of ore was drawn upon in 1911 it is impossible to state at present, but owing to the increased activity in the manufacture of pig-iron toward the close

of 1911, it is probable that the 1910 surplus was in part cleaned up and that at the end of 1911 only a relatively small quantity of iron ore remained at the mines.

### APPLIED CHEMISTRY CONGRESS.

#### Getting the Program Into Shape for the Session Next September.

Among the features of the Eighth International Congress of Applied Chemistry which are of interest and importance to those not directly concerned in chemistry are the general lectures, the aim of which is to have some particular branch of chemical activity presented in review by an acknowledged authority of a language and content adapted for the non-technical public. These lectures are only a part of the return that these international congresses endeavor to make to the country whose hospitality they enjoy. At the eighth congress, which meets in New York and Washington September, 1912, the following lectures are now announced:

England—"Some Physical Aspects of Molecular Aggregation in Solids." George Beilby, LL.D.

France—"The Role of Very Small Amounts of Chemical Substances in Bio-Chemistry." Prof. Gabriel Bertrand.

Italy—"Photochemistry of the Future." Prof. G. Ciamician. The exact dates for these lectures have not yet been arranged for, but suitable announcement will be made later.

The executive committee of the Eighth International Congress of Applied Chemistry has issued the rules governing papers, their presentation, discussion and publication in their final form, and as they will be used at the meetings. In the making of these rules the aid of upward of 1400 societies and many hundred individuals was solicited, and in many cases received. Copies of the rules in leaflet form can be had upon application from Bernhard C. Hesse, secretary of the congress, at 25 Broad street, New York city.

Although the opening of the congress is very nearly nine months off, considerable interest has been shown in the scientific side of the work. The 24 sections which go to make up the congress have today in hand in a more or less advanced stage upward of 300 papers of a scientific nature. The large majority of these are to be prepared by American chemists, and undoubtedly the foreign chemists will be well represented among the papers that are still to be announced.

### Drainage System to Cost \$550,000.

Board of Trade,

Little Rock, Ark., January 6.

#### Editor Manufacturers Record:

The advertisement for proposals for the Fourche drainage district, which includes the southern and southeastern suburbs of Little Rock, has been made public. This is a very large district, and will reclaim 86,000 acres of land. The cost, it is said, will be \$550,000. It will increase values tremendously. It is reported that Isham Randolph of Chicago, an engineer of national reputation, will visit Little Rock this month to go over the plans and verify the figures of Lund & Hill, the local engineers. The people of Little Rock hope while this matter is up that arrangements will be made to incorporate with the district a comprehensive plan for sewerage the entire part of the city that could be made tributary. A plan of this kind ought to be figured out that would meet with the approval of the property-owners generally.

GEORGE R. BROWN, Secretary.

Be sure to read about "Thirty Years of Southern Upbuilding" on page 51.



# Hardwood at Louisville.

## DEVELOPING INTEREST IN THAT CITY AS A LUMBER CENTER.

[Special Correspondence Manufacturers Record.]

Louisville, Ky., January 9.

The announcement that two conventions of importance will be held in Louisville by lumber and woodworking interests has called attention to the importance of the city from those standpoints. The National Wholesale Lumber Dealers' Association will meet here March 6 and 7, the board of trustees having recently made this announcement, and the convention of the National Veneer and Panel Manufacturers' Association will be held in June, the exact dates not having been determined. The invitation to meet here was extended to the veneer men at a meeting in Chicago last month.

The wholesalers' organization, which has headquarters in New York, was invited to this city by the Louisville Hardwood Club, a young but vigorous organization, which has been in existence for only three years, but during that time has made a name for itself all over the country. It has also established a unique record as far as entertaining lumbermen's associations is concerned, the National Hardwood Lumber Association meeting here in 1910 and the Hardwood Manufacturers' Association the preceding year.

The main object of the Louisville Hardwood Club has been to attract attention to Louisville as a lumber market. This has been done by a system of co-operative advertising, in which the market, rather than individuals, has been dwelt upon. The collective stocks carried here have been made available for handling a given order, and the consumers of the country have been impressed with the fact that Louisville hardwood men are able to supply anything in that line. The exploitation work has been remarkably effective, and has been adopted by lumbermen's organizations in other markets with good success. The Hardwood Club idea, as a matter of fact, was originated here, and the formation of similar clubs in Nashville, Memphis and other Southern lumber-producing cities, as well as those in other sections, was a result.

The National Wholesalers' Association is largely a body of lumber buyers, its members handling the major portion of the lumber which is consumed in the East. It is expected to develop many matters of interest at its March gathering, and Southern lumbermen will enjoy the advantage of being put into close touch with leaders of the trade in the big Eastern consuming sections. New York, Boston, Philadelphia, Buffalo and Rochester lumbermen are prominent in the membership of the organization, although there are, of course, members in other parts of the country as well.

The Louisville Hardwood Club, which will entertain the convention, consists of nine lumber-producing concerns, all of which have sawmills or yards in Louisville. The members are W. P. Brown & Sons, who have large yards in Louisville and mills at Dickson, Tenn.; Madisonville, Ky., and Indianapolis, Ind.; the Edward L. Davis Lumber Co., which has a mill in Louisville, and others at Glasgow and Pineville, Ky.; the Louisville Point Lumber Co., which has a sawmill here and another at Ford, Ky.; E. B. Norman & Co., who have a sawmill in Louisville and are now erecting a large double-band mill at Holly Ridge, La., where it will cut the timber on 28,000 acres of land; the Norman Lumber Co., which takes the cut of a large number of small Tennessee and Kentucky mills and operates a resawing plant

at its large yards in this city; the Mengel Box Co., which has sawmills at Hickman, Ky., and Mengelwood, Tenn., and is also closely associated with the Richland Parish Lumber Co., which operates a big sawmill at Rayville, La., modern features of which have been described in the MANUFACTURERS RECORD heretofore; the Ohio River Sawmill Co., which operates a mill here; C. C. Mengel & Bro. Company, who are among the largest manufacturers of mahogany lumber and veneers in the world, and have logging camps on the west coast of Africa, in British Honduras and Yucatan, and who operate a large sawmill and a veneer mill at their South Louisville plant, and the Louisville Veneer Mills, which has one of the largest and best known veneer and panel plants in the country.

Officers of the club are T. M. Brown, W. P. Brown & Sons, president; D. E. Kline, Louisville Veneer Mills, vice-president; C. M. Sears, Edward L. Davis Lumber Co., treasurer, and G. D. Crain, Jr., secretary.

The attention centered on Louisville in connection with the prospective meeting of the Veneer and Panel Manufacturers' Association has developed the fact that, including New Albany, Ind., the suburb of Louisville which is just across the Ohio River, there are in this market 10 plants which manufacture thin stock, some of them producing a considerable portion of the entire output in their line. C. C. Mengel & Bro. Company, as stated, are immense producers of mahogany veneers, while the Louisville Veneer Mills makes both thin stock and glued-up panels. The Kentucky Veneer Works has a large and well-equipped veneer mill in Louisville, as has the Southern Veneer Manufacturing Co., the plant of which was considerably enlarged after a fire a little more than a year ago. The other plant is that of the Anderson Veneer & Sawmill Co., which is one of the newer acquisitions in this line.

On the Indiana side of the river are the plants of the New Albany Veneering Co., easily the finest exclusive panel plant in the country; the Indiana Veneer & Panel Co., another large concern; the Heimbarger & Drinkard Company, Roberts & Conner and the New Albany Box & Basket Co., all of which manufacture veneers.

Louisville manufacturers have gone to the front in the production of mahogany and quartered oak face veneers, which have won fame on account of the splendid figure which has characterized the stock handled here, while of late some of the panel plants have been specializing with good effect in figured red gum work, which has stood comparison with Circassian walnut without suffering thereby. It should also be noted that red gum lumber is being handled largely by local lumbermen.

Owing to the extensive interests of veneer and panel men in the Falls Cities, it has been suggested that a club of manufacturers in this line be formed. The matter has not yet assumed definite shape, but it is expected that steps in this direction will be taken in the near future, especially in connection with the entertainment of the national body.

Reference to the lumber and woodworking companies of Louisville suggests the remark that the furniture manufacturing interests of this city have been expanding. The growth of this section of the woodworking trade has been gradual, but substantial, and the city is coming to the front as one of the most important in this

line in the South. One of the steps forward during the past year has been the formation of a furniture manufacturers' association, which includes those who make allied lines, such as brass beds, pillows, mattresses, etc., and the purpose of which has been to exploit the Louisville market.

One of the big advantages of the plan has been co-operation in loading less than carload shipments to the same point, the individual manufacturers being thus enabled to ship goods to more distant points and to smaller communities than they had been able to reach before. The officers of the association are A. H. Ross of the Ross Chair Manufacturing Co., president; W. F. Quinn of the Louisville Pillow Co., vice-president, and A. L. Markham of the Dow Wire and Iron Works, makers of metal beds, secretary.

One of the biggest of the local plants is that of the Inman Furniture Co., which has been in operation about a year and a half. The growth of this concern necessitated the addition of another factory building 250x200 feet, two stories in height, with a basement, and doubling the capacity of the drykilns in order to enable more lumber to be prepared for working. The Wilson Furniture Co., which is one of the veterans in the local market, has also added to its facilities through the addition of a three-story brick warehouse 50x100 feet. The company has also added several higher-grade numbers to its line.

Other leading manufacturers of furniture in Louisville include the H. Wolke & Bro. Furniture Co., Peter Jacobsen, the Louisville Table Co., Palmer & Hardin, the Old Mission Furniture Co. and G. Bittner's Sons.

Commenting on this city as a location for a furniture manufacturing plant, one of the local members of the trade said:

"Louisville offers many advantages to the manufacturer of furniture. There is an abundant supply of lumber, which can be brought into the market at an exceptionally low freight rate on account of the potential competition of the river and the proximity to the source of supply. This has always been a leading woodworking town, and there is a good supply of skilled labor for this class of work. Freight rates out of Louisville to nearly every consuming section are favorable, and we have no difficulty in selling all over the United States.

"The South, being the leading producer of hardwood lumber, should also be a leading consumer of it in the form of manufactured goods, and there is no reason why Louisville and other cities south of the Ohio River should not become great centers for the manufacture of furniture."

There has been some talk of establishing a permanent exhibition of Louisville furniture for the benefit of buyers coming to this market, but thus far the plan has not been worked out to the details. The local association will doubtless have this in charge if it is attempted.

### Foreign Competition for Large Pipe Contract.

J. G. White & Co., Inc., of New York and San Francisco, have just purchased 124 miles of 12-inch steel pipe, to be used by them in building a natural-gas line for the Midway Gas Co. of California. The pipe will weigh approximately 11,000 tons, and, with transportation, will cost approximately \$600,000.

Quotations were asked from British, German and French manufacturers, and the best foreign price was that of a British firm, which, exclusive of duty and freight, was approximately double that at which the contract was placed with the

National Tube Co., a subsidiary of the United States Steel Corporation.

This indicates the remarkable resources of the United States for cheap production of steel and the advantages of buying this kind of manufactured material in the American market.

### BIRMINGHAM IRON MARKET.

#### Manifestations on Different Lines in the Past Week.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., January 8.

The movement from furnace yards since January 1 has in the majority of cases been in excess of the output during that time, and the volume of new business entered was about equal to expectations. A basis of \$10 per ton Birmingham is still quotable for deliveries covering the entire first half, with a differential of only 25 cents per ton for the grades below No. 3 foundry, but sales were reported in the week at an advance of 50 cents per ton over such figures. It is probable that in the transactions, involving a basis of \$10.50 per ton at Birmingham, an unusual arrangement was made at the silicon content of the iron to be furnished, yet it will be remembered that only four weeks ago similar arrangements were being made where the price consideration was \$10 per ton Birmingham for No. 2 foundry. As to the tonnage still to be had at the last-named price, much depends upon the rate at which shipments will be made during this month. From the most reliable information obtainable only two producers will now enter tonnage to cover the first half at the figures referred to, the other concerns quoting that price insisting on January and February delivery. The warrant iron offered at a \$10 schedule is, of course, for spot delivery, although in some instances the freight advantages to certain quarters of the territory are conceded. A lot of high-manganese iron under warrant was sold in the week at \$11 per ton at furnace, and regular fracture iron, under warrant, could not be had for less than 10 and \$0.50 per ton at furnace for Nos. 2 and 3 foundry, respectively. The reduction in the rate of production that has just been made was the result of necessary repairs, but fortunately those operators who have idle capacity in readiness for operation do not consider an increase to offset the reduction warranted. With the blowing out of the Ironaton furnace of the Alabama Consolidated Coal & Iron Co., just referred to, only 19 stacks are left in operation in this district on coke iron. Of this number, four are producing basic iron and two additional stacks are being operated on charcoal iron. The stack of the Eagle Furnace Co. at Attalla, Ala., that has been on charcoal iron for some three months was blown out for relining during the past week.

The inquiry for all grades that is pending at this time involves a small tonnage comparatively, with less interest manifested in deliveries during the remainder of the year than formerly. In this connection it is noted that the Alabama furnace operators will within the next 10 days make vigorous efforts before the Southeastern and Mississippi Valley freight associations to secure lower freight rates from Birmingham to Cincinnati, O., and other competitive markets. Steps in this direction were taken some months ago by taking the matter up with the heads of freight departments representing the several lines covered, but without the encouragement desired, and it now appears that unless some action is taken by the railroads the matter will be taken directly to the Interstate Commerce Commission. With the rate to Cincinnati, O., from Birmingham furnaces \$3.35 per gross ton, as at present, it is almost impracticable,



with the present low selling price for pig-iron, to compete with the Virginia and Pennsylvania furnaces, as well as the Ohio furnaces, and it is pointed out that unless such a reduction is granted as will allow the Birmingham operators to hold their patronage in the territory affected the trade in that territory will substitute other brands of iron in their mixtures, and that when selling prices will permit the Southern interests to again enter those markets there will be no demand for the brands offered. This matter is deemed of vital importance to the pig-iron industry in this district, and the most conservative men in the industry are taking active parts in the efforts being made.

We quote the Birmingham market for deliveries during the first half of this year as follows per gross ton f. o. b. cars at Birmingham: No. 1 foundry, \$10.50; No. 2 foundry, \$10; No. 3 foundry, \$9.50; No. 4 foundry, \$9.25; gray forge, \$9; standard basic, \$10; standard charcoal iron, \$22.50.

Local cast-iron pipe manufacturers have been favored only with small orders for maintenance work since last report, the result of bids on requirements for Minneapolis, Minn., and Muskogee, Okla., not having been given out at this time. So far as is known, prices as quoted are being fully maintained, and indications favor a much lower demand, owing to the present low level of prices, comparatively, and to the volume of business known to have been held in abeyance for some time by reason of the lack of necessary funds for municipal improvements. Mention is not made of actual specifications under consideration at this time other than have been reported in previous issue. We continue to quote class "B," or water pipe, as follows per net ton f. o. b. cars here, with class "A," or gaspipe, \$1 per ton higher, viz.: Four-inch to six-inch, \$23; 8-inch to 12-inch, \$22; over 12-inch, average \$21, with special fittings quotable at from \$50 to \$55 per net ton at foundry.

Incident to the cast-iron pipe market considerable interest is taken in the proposal of the Central Foundry Co. to build a plant at Holt, Ala., for the manufacture of water pipe, the same as is now being manufactured at the Bessemer (Ala.) plant of that company. A very large tonnage of the pipe referred to was used by local manufacturers during the past year, and one or more water-works systems were also installed. However, owing to the high cost, comparatively, the product is more adapted to mine work than for municipal requirements, and it is from this last class of trade that the bulk of the tonnage to be placed is expected. It will be noted that the pipe referred to is manufactured in short lengths, and that the ends are so machined as to form a perfect connection at any angle without the use of packing. These features have proved very economical in the installation of pipe line in coal and copper mines, and have steadily gained favor with the leading mining engineers. It is understood that with the new equipment and increased tonnage at the plant proposed the cost of this material will be materially reduced, and developments in this connection are being watched with interest.

There has been no further revision of asking prices for old material, and dealers report a very steady demand for wrought and steel grades. The local accumulation of all grades is considerably less than normal and efforts being made to increase holdings wherever practicable. We continue to quote asking prices as follows per gross ton f. o. b. cars here, viz.:

Old iron axles, standard, \$15.50 to \$16.  
Old iron axles, small, \$12 to \$12.50.  
Old steel axles, light, \$13 to \$13.50.  
Old steel axles, standard, \$14 to \$14.50.  
Old iron rails, \$13 to \$14.

No. 1 railroad wrought, \$11.50 to \$12.  
No. 2 railroad wrought, \$8 to \$8.50.  
No. 1 country, \$7 to \$7.50.  
No. 2 country, \$6.50 to \$7.  
No. 1 machinery, \$8.50 to \$9.  
Standard car wheels, \$11 to \$11.50.  
Tram car wheels, \$8 to \$8.50.  
Light cast and stove plates, \$7 to \$7.50.  
The output of steam coal was increased to an appreciable extent during the past week, and prices have been affected accordingly. The extremely cold weather during the past 10 days has brought out a very strong demand for domestic coal, and mine operations have necessarily been changed in order to make the deliveries required. From the data compiled by the Alabama Coal Operators' Association, indications for this year favor the largest production of steam coal in the history of the industry in this State. The increased demand is expected to come through the vigorous efforts being made for export and steamship business, and to accommodate such trade negotiations are now under way for additional dock facilities at Pensacola, Mobile and New Orleans. During the past week the transfer of the State convicts from the Pratt mines of the Tennessee Coal, Iron & Railroad Co. to the "Banner" mines of the Pratt Consolidated Co., which mines have been leased to the State, was accomplished, and the output at the last named is now some 1000 to 1500 tons daily. Free labor has been put to work in the Pratt mines of the Tennessee Coal, Iron & Railroad Co., for which purpose a contract has just been let for the construction of some 300 houses of the type usually built for mine labor. Steam coal is now quotable at from \$1.25 to \$1.50 per net ton at mines, with domestic grades from the favorite seams bringing a slight advance over the scale price.

A very satisfactory tonnage of round and bar iron is reported as having been placed through local offices during the past week, and operations at all local mills are steady. It is announced that with the Southern Railway order for standard steel rails, the Ensley plant will be operated during the first half on orders actually in hand, while unconfirmed reports favor sufficient tonnage on books for delivery during the last half to take care of the capacity during that time. For light steel rails there is very little demand, with 12-pound to 40-pound sections quotable at \$1.35 per hundredweight, with 8-pound sections quoted at \$1.60 per hundredweight. The price on this last mentioned is for less than carload lots.

#### Cyanimid Plant Nearing Completion.

The South will soon be producing fertilizer from the air, as the Southern Electro-Chemical Co.'s plant at Nitrolee, S. C., is nearing completion. This plant will derive its power from the big water-power developments of the Southern Power Co. at Great Falls and Rocky Creek, several miles distant, where 80,000 electrical horse-power can be generated. It will utilize about 4000 horse-power and produce about five tons of nitric acid every 24 hours, which will furnish about eight tons of nitrate of lime. The limestone used will be taken from nearby hills composed largely of this rock. This initial cyanimid plant is for experimental purposes, and will use the patent right of Dr. Albert Pauling, a continental scientist. It is located at the confluence of Fishing Creek and the Catawba River, and the company has in view the construction of a second plant to utilize about 20,000 horse-power.

The plant consists of a monster furnace, oxidation tanks, with connecting pipes, steam receptacles, cooling chambers and absorption towers. The furnace contains the flame chamber, which is constructed

of a specially-prepared fire-clay brick, with masonry and iron supports. Two electrodes convey the electricity, which, in the magnetized field, furnishes the arc through which the air is driven. The effect of the intense heat, 3000 to 3500 degrees centigrade, upon the air is to consume the oxygen and carbon dioxide and disassociate the particles, leaving the nitrogen in the form of nitrous oxide. This nitrous oxide escapes through a channel built along the casing of the furnace into the fireproof-lined gas-collecting pipes which convey the gases to the steam boiler-house, where the temperature is reduced to about 1000 degrees centigrade. The temperature is further reduced in the cooling tanks and then the gases are conveyed to the oxidation tanks and then to the absorption towers, where crushed limestone is found. The result of this last process is the desired nitrate of lime. The price of the finished product is about \$50 a ton."

#### Texas Crop Possibilities.

[Dallas News.]

Following is the report of the committee of awards which gave the \$10,000 in premiums offered by the Texas Industrial Congress for the best results obtained from the cultivation of cotton and corn along approved scientific lines:

"We, the undersigned, C. M. Evans, H. H. Williamson, J. H. McLeod and A. J. Smith, acting at the request of Col. Henry Exall, president of the Texas Industrial Congress, as a committee to determine the successful contestants for the \$10,000 in gold prizes offered by the congress for the largest combined yields of corn and cotton produced in the State this year, have examined the proofs of the yields of various contestants as submitted to us and have awarded the different prizes as follows:

"For the largest combined yields of merchantable corn and middling cotton, each crop consisting of 10 acres, grown on one plot or tract of land, on the same farm, under the same management and without irrigation:

"To W. B. Hinkley, San Benito, Cameron county, who produced 31.734 bushels of corn and 1.695 bales of cotton per acre, the first prize of \$2500.

"To Collin A. Hunley, Buffalo, Free-stone county, who produced 51.273 bushels of corn and 1.331 bales of cotton per acre, the second prize of \$1500.

"To Charles A. Doss, Rockdale, Milam county, who produced 52.826 bushels of corn and 1.1928 bales of cotton per acre, the third prize of \$750.

"To George A. Doss, Rockdale, Milam county, who produced 54.594 bushels of corn and 1.1364 bales of cotton per acre, the fourth prize of \$500.

"To Joseph Vitek, Fayetteville, Fayette county, who produced 56.77 bushels of corn and 1.1 bales of cotton per acre, the fifth prize of \$250.

"To P. C. Galler, Taylor, Williamson county, who produced 42 bushels of corn and 1.1578 bales of cotton per acre; to J. S. Carroll, Tennessee Colony, Anderson county, who produced 35.972 bushels of corn and 1.1116 bales of cotton per acre; to Frank Krenck, Jr., Lovelady, Houston county, who produced 42.52 bushels of corn and 1.0118 bales of cotton per acre; to W. O. Barnes, Hallville, Harrison county, who produced 58.763 bushels of corn and .801 bale of cotton per acre; to Ed Jones, Ivanhoe, Fannin county, who produced 11.1 bushels of corn and 1.2574 bales of cotton per acre; to M. H. Sims, Paris, Lamar county, who produced 18 bushels of corn and 1.183 bales of cotton per acre; to M. G. Bean, Paris, Lamar county, who produced 16.5 bushels of corn and 1.1884 bales of cotton per acre; to R. J. Johnson, Overton, Rusk county, who

produced 39.027 bushels of corn and .828 bale of cotton per acre; to S. F. Vaughan, Jonesville, Harrison county, who produced 17.702 bushels of corn and 1.0388 bales of cotton per acre, and to A. B. Dunn, Mart, Limestone county, who produced 29.09 bushels of corn and .8906 bales of cotton per acre: each \$100 for the 10 next best results.

"For the largest combined yields of merchantable corn and middling cotton, each crop consisting of two acres, grown on one plot or tract of land, on the same farm, and under the same management and without irrigation, by contestants not over 20 years of age, January 1, 1911:

"To E. S. Kovar, Fayetteville, Fayette county, who produced 115.625 bushels of corn and 2.06 bales of cotton per acre, the first prize of \$1000.

"To Horace Dennis, Athens, Henderson county, who produced 35.52 bushels of corn and 2.326 bales of cotton per acre, the second prize of \$750.

"To Roy Scott, Mount Pleasant, Titus county, who produced 58.29 bushels of corn and 2.005 bales of cotton per acre, the third prize of \$500.

"To Swann Haney, Tyler, Smith county, who produced 58.5 bushels of corn and 1.955 bales of cotton per acre, the fourth prize of \$250.

"To Olen W. Hunley, Buffalo, Free-stone county, who produced 86.916 bushels of corn and 1.579 bales of cotton per acre; to Joe Vajdak, Merle, Burleson county, who produced 101.055 bushels of corn and 1.29 bales of cotton per acre; to Emmett Allen, Lindale, Smith county, who produced 43.81 bushels of corn and 1.78 bales of cotton per acre; to Arthur Kloppenburg, Sublime, Lavaca county, who produced 93.33 bushels of corn and 1.23 bales of cotton per acre; to Clifton Woodward, Tyler, Smith county, who produced 53 bushels of corn and 1.475 bales of cotton per acre; to Gregg Easley, Pitt Bridge, Burleson county, who produced 40.52 bushels of corn and 1.555 bales of cotton per acre; to Isador Krenck, Lovelady, Houston county, who produced 34.868 bushels of corn and 1.602 bales of cotton per acre; to M. O. Eaton, Overton, Rusk county, who produced 50.15 bushels of corn and 1.328 bales of cotton per acre; to Joseph B. Stringer, Murchison, Henderson county, who produced 32.5 bushels of corn and 1.409 bales of cotton per acre, and to Ezra Short, Grand Saline, Van Zandt county, who produced 36 bushels of corn and 1.36 bales of cotton per acre: each \$100 for the 10 next best results."

#### Dynamite in Texas Farming.

[Special Cor. Manufacturers Record.]

San Antonio, Tex., January 6.

Farming with dynamite is arousing considerable interest in Southwest Texas, and arrangements are being made in various sections for public demonstrations of breaking the subsoil with explosives. It is claimed by those that have made a study of this method of subsoiling that it can be done better with dynamite than by any other means, and the cost of the work need not be greater than a thrifty farmer can afford. The benefit claimed for this process is that land thus treated will receive and retain much more rainfall and moisture than soil not blasted. If the experiments now being conducted in Texas are successful, the method of farming will be almost revolutionized.

Experiments will be made also in the clearing of brush lands with dynamite, and they will be watched with interest by all landowners in this part of the State.

"A Wonderful Story of the South's Wonderful Progress and Prospects" will be "Thirty Years of Southern Uplifting," particulars of which you will find on page 51 of this issue.



# Uses of Peat for Fuel and Other Purposes.

By CHARLES A. DAVIS.\*

The Bureau of Mines is making a comprehensive investigation of the composition, heat value and utility of the mineral fuels in the United States. In the course of its research the bureau is giving particular attention to methods of mining and utilizing fuels to the end that waste may be avoided and deposits of low-grade fuels now lying unmined may be made important assets of the nation's mineral wealth. The investigation as a whole is a continuation of the testing and analyzing of fuels, as carried on by the United States Geological Survey, from the inception of the work in 1904 to the transfer thereof to the Bureau of Mines on July 1, 1910. In consequence of the transfer of authority this bulletin is published by the Bureau of Mines, though it was prepared under the direction of the Geological Survey.

The bulletin sets forth the results of an investigation that was undertaken to determine whether peat, a fuel widely used in some countries, could be made serviceable in the United States, where, though labor and economic conditions differ from those in the peat-using countries, there are opportunities for the introduction of a fuel selling at prices that should make the mining and shipment of peat to nearby markets profitable. In connection with the investigation of the possibilities of utilizing peat as fuel, attention was incidentally given the possible development of other uses with the view of increasing the value of a material that hitherto has not been generally considered an important natural resource of the United States.

The difficulties which have always been encountered in utilizing peat for fuel are due to the fact that in its natural state the material contains only about 10 per cent. of combustible matter, the remaining 90 per cent., more or less, being water; this water is inherent because of the nature of the processes by which the peat is formed. The foregoing statement leads logically to the following definition:

Peat is partly decomposed and disintegrated vegetable matter that has accumulated in any place where the ordinary decay or chemical decomposition of such material has been more or less suspended, although the form and a considerable part of the structure of the plant organs are more or less destroyed.

Water makes an excellent medium for preserving the remains of dead plants, and hence also for aiding peat formation, since it excludes air and most of the organisms that are the chief agents that cause wood and other plant structures to rot and finally disappear. The water may contain certain poisonous organic chemical compounds that originated in the growing plants, as the result of their activities, or were formed as decomposition products. These compounds may act with water to prevent the growth of the organisms which cause decomposition, but that excess of water is the paramount factor in the preservation of the vegetable matter seems capable of demonstration.

The above statement is so generally true that peat deposits within the limits of the United States are practically always formed in situations where water for the greater part of the year either saturates or wholly covers the plant debris from which peat originates. In those places where vegetable material is

saturated with water for only a part of the time and is subjected to periodical and prolonged drying out, true peat is not formed, but a more nearly complete decomposition takes place that results finally in the formation of humus; or, if the drying is continued long enough and other conditions are favorable, decomposition may go on until nothing is left of the plant material but the ash or mineral part.

According to its origin and the conditions under which it accumulates, peat may vary in color from brown to black. In texture it may vary from light, spongy matter that is porous, coarse, fibrous, or even woody, and easily falls to pieces when dry, to forms that are nearly or quite devoid of structure, and when wet are as plastic as clay and when dry form dense, hard masses resembling lignite. In all cases, as noted above, peat is nearly or quite saturated with water, containing, under usual natural conditions, from 80 to 95 per cent.

When dry, peat is generally lighter in color than when freshly dug and will usually float if placed in water, although this is not always true of the dark-colored, plastic kinds that are high in ash, and when thoroughly dry are as compact and nearly as hard as coal. Except for such types, raw or untreated peat is easily crumbled to powder when handled, and makes bulky and unsubstantial fuel that does not bear transportation well. The name "muck" is commonly applied to black, impure peats of the more completely decomposed types.

Within the past few years a marked depletion of the visible supplies of coal, the approaching exhaustion of the supply of wood available for fuel, and a constantly growing demand for fuel for industrial and domestic uses have led to a general advance in the prices of both coal and wood.

This condition has caused economic geologists, economists and others to seek out and appraise new sources of fuel supply, and to contrive means of conserving and more perfectly utilizing the present supplies. The tendency toward more efficient utilization is shown in the development of interest in briquetting as a means of saving coal-mine waste and converting it into useful fuel, in the increasing use of internal-combustion engines as sources of power, and in the steady improvement of boiler furnaces and combustion chambers for burning solid fuels most economically. The same tendency is shown in the increasing use of compound steam engines and of devices for assuring complete combustion. Another manifestation of this tendency is the growing desire to investigate and utilize hitherto unconsidered kinds of fuel and to make use of sources of power other than fuel.

The earliest use of peat was for fuel, and dates back to the dawn of history. Latin authors of the time of the conquest or Northern and Western Europe by the Romans commented on the miserable condition of some of the people of those regions, who dug the soil from their marsh lands with their hands, and, after drying it, burned it to warm themselves and cook their food. In Ireland, of necessity, peat has been the only domestic fuel of the mass of the people from the traditional time when the forests of that country were finally cleared away.

Scarcely less ancient is the use of peat for fuel in other parts of Northern Eu-

rope—Holland, Germany, Russia and parts of France and Austria. The disappearance of the forests at a comparatively early period, while agriculture was the most important industry of these countries, led to the widespread use of peat fuel, especially by the poorer classes of people.

Peat has long been generally used in Europe as fuel for heating and other domestic uses, and more recently for power generation. Its production in compacted forms suitable for transportation and storage is growing constantly, so that at present every European country having any considerable area of peat deposits is increasing the output of peat fuel. In addition, Ireland and the countries of continental Europe are encouraging its use by direct appropriation of funds to aid new and promising methods of preparation, and are supporting experiment stations for investigating and perfecting new processes for utilizing this important natural resource.

In some parts of Canada, because of climatic conditions, the lack of any considerable deposits of coal, and the existence of generally distributed and extensive peat beds, more or less successful attempts have been made for 50 or more years to utilize peat as fuel. The matter has recently received new impetus there because of an industrial awakening and because of improvements made in gas producers and gas engines in Sweden, Germany and the United States that permit satisfactory use of low-grade fuels. As a direct result of these factors, an experimental gas power station using peat is being established under governmental control and thoroughly equipped with the best European machinery. During a part of the season of 1910 the Mines Branch of the Canada Department of Mines operated on a commercial basis a demonstration peat-fuel plant. This was located at Alfred, Ontario, about 30 miles from Ottawa, and was equipped with Swedish machinery. Part of the 1600 tons of air-dried machine peat produced by the plant was sold to those wishing to try the fuel, and part was used in the gas-producer plant established by the Government in Ottawa for testing peat, lignite and similar fuel. These plants are fully described in Bull. No. 4, Can. Dept. of Mines, Mines Branch, 2d edition, 1910.

In the United States, for obvious reasons, peat had received but scant attention, except at the hands of a few widely scattered experimenters, until the winter of the year 1902-3, when the memorable long-continued strike of the miners in the anthracite regions of Pennsylvania brought a large section of the country to a realizing sense of its almost complete dependence on that group of men for its supply of fuel.

Since that time there has been an important, if unsuccessful, series of attempts to produce peat fuel on a commercial scale, and in the aggregate hundreds of thousands of dollars have been spent in equipping plants to manufacture it for the general market.

After the development of the steam engine, and the great impetus which this gave to the commercial and manufacturing industries of all European nations, peat was used in constantly increasing amounts for the generation of power by those nations poorly supplied with other fuels. Such use naturally led to material improvements in the ways of preparing peat for fuel, and to much experimenting aimed to increase the quality of the fuel produced and the rapidity of production. The period of experimentation covered more than half a century.

The experimental work has not been wholly confined to ways of utilizing peat

as fuel, but has included efforts to discover numerous other uses to which the substance, or some part of it, might be adapted as raw material for some manufacture in regions where raw materials for the specified purpose were either not produced, were scarce, or were expensive.

Therefore, anyone desirous of undertaking the use of peat for any purpose will find it profitable carefully and critically to review the work that has been done in Europe, especially in Germany, Denmark, Norway and Sweden, in order to get the benefit of the great amount of information that is stored in the literature relating to the subject. Not the least important sources of such knowledge are the records of failures which have occurred, because mistakes made and recorded need not be repeated.

In America much less need has arisen for the study of the possible uses of peat. In Canada, partly because of its small coal fields and cold climate, partly because of the greater abundance of peat, and doubtless, also, partly because of the fact that many of the settlers before coming to this country were accustomed to using peat as fuel and liked it, more persistent attempts have been made to develop a peat-fuel industry than in the United States. For 50 years or more some peat fuel has been produced in the Province of Ontario and Quebec and has found ready sale, although the manufacture seemingly has never been a great success commercially.

In the United States peat fuel, in the form of cut peat, was used in parts of New England almost continuously from the time of settlement until the use of coal became general. Peat bogs in various parts of Massachusetts and Rhode Island still show depressions that were made years ago by the removal of the peat for fuel, and in places remote from railroads some peat is probably still cut for local or individual use.

During the latter part of the Civil War, and in the years immediately following the war, considerable interest was shown in New York, Boston and in some other parts of the United States in the production of peat fuel on a large scale, and plants were established at various places in New York, New Jersey, Virginia and New England to experiment with machinery and processes for peat manufacture. These plants seem usually to have had little financial backing, however, and none of them, so far as known, ever reached the commercial stage of production. The one which probably came nearest that point was that of the Boston Peat Co. at East Lexington, Mass., where an excellent quality of peat and an efficient machine for macerating and forming it into bricks made a good product possible. The enterprise was carried along for some years, but was eventually discontinued.

In 1902-3 the strike of the anthracite coal miners already referred to created a fuel famine such as had never before been experienced in the United States, and revived the interest in the use of peat as fuel. Since that time many attempts have been made to produce fuel from peat on a profitable commercial scale, but for many reasons, some of which are considered hereafter, very little peat fuel of any sort has yet appeared in American markets. However, at least \$1,000,000 in the aggregate has been spent in erecting plants and in experimenting with various processes of handling and preparing the substance. Because the closing of larger plants before they had reached a stage of demonstrated success was so general, more conservative developments have been planned for making a thorough trial of the material in favorably situated places.

\*From Bulletin 16 of the National Bureau of Mines.



under American conditions of production and fuel supply. Some of these are about to be started under much more favorable auspices than any of their predecessors.

It is evident from the foregoing that as yet no peat-fuel industry can be said to exist in the United States, although much experimental work has been done and great sums of money spent to establish one. In Europe the peat beds of various nations are sources of raw materials for industries of some magnitude, although their development is still in an experimental stage. In the United States, with few exceptions, the use of peat for other than fuel purposes has not yet been attempted, partly because of the great quantities of better materials available for the purposes, and partly because manufacturers are not sufficiently informed regarding the possibilities of different kinds of peat.

So little exact information has been obtained in regard to the area and depth of the peat deposits in the United States that an accurate estimate of the quantity available is impossible. On the assumption that there are in the United States, exclusive of Alaska, 139,855 square miles of swamp lands, it is estimated that 8 per cent. of this area, or 11,188 square miles, will have peat deposits of good quality. Assuming further that the average depth of the peat in this area is at least 9 feet, and that the average yield will be 200 tons of salable fuel per acre for each foot of depth, the total available fuel in these deposits will reach 12,888,500,000 tons; this quantity, if converted into machine-peat bricks and sold at \$3 per ton, would have a value of \$38,665,700,000—no mean resource, but one that would furnish heat and power for the entire country for many years.

Peat beds are not uniformly distributed over the country, but lie chiefly in the region north of a somewhat irregular line extending westward from close to the southern boundary of New York nearly to the ninetyeth meridian and thence northward to Canada. This region is supplemented by a narrow strip of land that extends along the Atlantic coast to Florida, includes the whole of that State, and reaches westward, probably across Texas, to the Mexican border. In the Pacific Coast States there are some peat areas of workable size in California, and also in the valleys of some of the lakes and rivers of Oregon and Washington, but little is known of the extent and character of the deposits.

The reasons for this peculiar distribution of peat are not evident, but extended investigation will doubtless show it to be definitely correlated with certain geologic and climatic conditions which can not be discussed here.

It is an exceedingly interesting coincidence and a most important economic consideration, however, that the regions where peat is most abundant are relatively remote from the coal fields, the only exception being an overlapping of peat and coal in Michigan. In that State, however, as geologists are aware, the part of the coal field known to be commercially productive is not of large extent, but, so far as developed, is confined to small areas on the eastern and southern margins, the interior yielding but little coal. Aside from this area, the much-less marked overlapping of peat and coal in Illinois, and the slight coinciding of peat and lignites in the western border of the peat-bearing regions, there is a well-marked separation of the coal fields and the areas that contain peat.

When one also notes that the more Northern States, in which fuel is most needed, and the parts of the Southern States where other kinds of fuel are not

readily available, are rich in peat, it seems strange that a more careful examination into the possibilities of the peat resources of the country has not been made, because potentially they have large value and great possibilities.

On the whole, then, it may be said that the use of peat for any purpose in the United States is small as compared with that in European countries. The peat beds are a great and neglected resource which, when properly and fully developed, will add to our national wealth no inconsiderable quantity of good fuel and of raw material for important arts and manufactures. The discussion will of necessity be devoted largely to the uses of peat in European countries and to the methods of securing marketable products in commercially paying quantities there. Only by carefully considering these can the mistakes and failures of the past be avoided and improvements of existing processes made.

It must also be considered that any mechanical devices and processes for making pea fuel and other products which are in successful operation abroad are those which have established themselves by demonstrating through a long period of years their value in competition with many others which have been eliminated because of failure to meet the demands put upon them by the requirements of actual commercial operations. These devices and processes are therefore all the more worthy of careful study by prospective investors in this country.

To summarize: The foundation of all successful development and growth of peat industries in the United States must be a thorough scientific study of the occurrence, nature, qualities and peculiarities of peat itself and a careful and honest investigation of the status of these industries in the European countries in which they have reached self-supporting existence. To begin without these preliminary studies would be the height of folly.

Comparing the cost of peat fuel with that of coal, the former could be produced with less danger and with a much less expensive equipment if it needed only to be dug, because it lies at or just below the surface of the ground. A readily marketable type of peat fuel, in the form of air-dried, slightly compressed blocks, can probably be produced at an expense of from 75 cents to \$1.25 or \$1.50 per ton, and, with properly devised and properly arranged machinery, production on a large scale would considerably lower the higher price for peat of well-decomposed types.

On the basis of the comparisons of the heating values given in the following sections, and at the prices of production noted, clearly more heat units for the same investment of money could be obtained from peat than from coal, for two tons of peat could doubtless be bought for the same price as one ton of coal, and even the best coals do not have twice the heating value, pound for pound, of good fuel peat. No peat fuel has yet been produced at such low cost in this country, however, and that the figures based upon European production can be made the basis of calculation for American conditions remains to be demonstrated. That the bulkiness of air-dried peat fuel will make the cost of transportation and of storage under cover relatively high must also be noted. The high cost of transportation will probably prevent the shipment of the product for any considerable distance from the place of origin except by water routes; the high cost of storage will easily adjust itself when consumers have an opportunity to learn the value of peat fuel.

Both transportation and storage are

facilitated and objections of the sort mentioned are reduced to a minimum if the peat is compacted by thorough maceration, or pressed into small, dense, compact briquets by the use of powerful briquetting presses. As pointed out below, however, there are serious difficulties in the way of using the latter process, and until these have been removed and this method of preparation is a demonstrated commercial success no conclusions of value can be based upon it as a factor in this discussion.

In conclusion, peat fuel may be said to be especially useful for certain purposes for which wood was formerly in general use and for which coal has not yet been altogether successfully introduced, such as brick and other forms of ceramic firing and lime burning. It appears to reach its highest value, however, as a source of producer gas in properly constructed gas producers, and this is a very efficient way in which to use its energy.

The fact must be noted that no quantity of peat fuel of any type sufficient to prove its value has yet been produced in the United States; until this has been done, although the outlook and European experience warrant further investigation of its possible uses and value, no final conclusions as to the commercial value of American peat as compared with coal can be reached.

The utilization of peat in agricultural operations is a topic of importance to the farmers of the regions of the United States where peat deposits are common, especially where reclamation by drainage is being undertaken, and this is beginning to be realized by those who are working on the problems involved in increasing the rate of yield and the diversity of farming operations. The subject of the proper value of peat and peat lands to agriculture is so important and so complicated that it can be fully discussed only after a great number of practical experiments on a large scale have been made to determine the availability of this sort of land for various kinds of crops under the wide range of temperature, of rainfall and of types of peat that exists in the United States.

In Europe, partly because of the large areas of unproductive peat land in the agricultural countries, and partly because of the crowded condition of these countries, the qualities of peaty soils have been made for many years the subject of exhaustive and careful study by trained specialists.

These generally work under the auspices of a society made up of farmers, landholders and others who are interested, and aided by definite appropriations of funds by the Government. The Government further aids in this important work by establishing and maintaining experiment stations at peat bogs, where the necessary experiments as to culture, drainage and other phases of the problem are systematically carried out on such a scale that their practicability as well as their desirability may be determined. Government aid and supervision is given to plans for the colonization and development of large areas of marsh lands, and in Germany a number of such colonies are now established.

No work of this sort has yet been attempted in the United States except at a few of the State agricultural experiment stations, where investigations of the value of peat as a fertilizer and as a soil for certain crops are now being carried on.

In its natural condition peat is too wet to be worked, and before any crop plant can be made to grow upon it the surface must be cleared and the water level lowered by effective ditching and draining. In general, after this has been accom-

plished, the surface layers of the peat are coarse in texture and often full of partly decayed stumps, roots and other woody debris, which must be removed.

The coarse-textured peat dries out readily and affords only a small amount of plant food, so that after a short time, or during unfavorable seasons, crops fail. Often swamps are cleared, drained and cultivated for a brief period at considerable expense and then abandoned because they are, as a rule, unproductive.

Aside from the coarseness of peat soils and their consequent poverty of moisture and plant food, an important cause of crop failure seems to be the attempt to grow crops not adapted to the soils. Extended observation in various parts of the country where peat soils are common seems to indicate that after one or two crops have been taken from newly cleared peat land of the common kind, grass is most likely to yield good crops for a number of years until the surface layers are blackened and disintegrated into a fine-grained, homogeneous mass. After this has been accomplished, various kinds of crops may be raised, but these, as a rule, should be such as can well endure cold nights and early frosts, and are not greatly injured by drought. Various truck crops, such as onions, lettuce, celery, cabbage and other vegetables, seem to thrive on well-blackened peat and often yield very large returns.

Peat soils generally need mineral fertilizers, especially potash, because they contain little available mineral matter, and barnyard manure is often very effective in adding to their productivity, both because it adds to the peat material which the latter lacks and because, seemingly, it promotes the decomposition of the peat by introducing the fungi and bacteria which cause decay and hasten humus formation.

In some parts of the country peat soils are among the most productive of any, yielding large crops years after year with no more care than is required to obtain inferior crops from other kinds of soils. In such places, however, the peat is of the thoroughly decomposed, black type, generally known as "muck;" the brown, fibrous kinds are seldom very fertile until they have been cultivated or exposed to weathering agents for some years.

Muck, or peat, has long been used by farmers as an auxiliary fertilizing material, either directly applied to the land or applied in connection with other fertilizers, especially in composts with barnyard or stable manure. This practice is justified by the composition of peat, some kinds of which contain from 2 to 3 per cent. of combined nitrogen, besides other organic matter, and when properly applied increase the humus in the soil, and hence the water-holding power.

To get the best results from peat for these purposes it should be dug and left on the bog for a time to dry out and disintegrate thoroughly. This not only gets rid of the water, but renders the peat more absorbent and in better form to be mixed with the soil. It seems also to make the nitrogenous matters more quickly available for the use of crops to which it is applied.

If dug wet and spread over the land in this condition the peat may dry into hard, tough lumps that for a long time are of no more value to the land than stones or blocks of wood. Aside from this, a ton of wet, freshly dug peat contains only about 225 pounds of usable material, and in this material there is not enough fertilizing substance to justify the labor of digging and hauling it. On the other hand, the dry material, which may be obtained by digging out the peat in the fall and letting it lie on the bog until the next fall,



will yield excellent returns, especially if properly composted with coarse manure before being applied to the land.

The composting should be done in the ordinary way, by stacking the peat in thin layers alternating with those of stable refuse to a depth of several feet, and allowing the heap to stand for some months, turning over the whole at least once during the time. If the peat alone is used it should be applied liberally as dry as possible; it may be cheaply spread by a manure spreader. Such applications will improve the productiveness of many kinds of soils.

The air-dried peat may be used to even better advantage as an absorbent of the valuable nitrogenous liquids of stables and barnyards, which ordinarily are allowed to go to waste. For this purpose the dried peat needs simply to be piled up under cover until used, when it may be spread over the barnyard in layers as needed. If used in the stables, it will not only act as an absorbent of liquids, but, since it checks decomposition and absorbs gases, will be more or less effective as a deodorizer.

Dry, powdery peat may also be used for all the purposes for which peat mull is recommended above, and it is greatly superior, for most of them, to lime, ashes or the more expensive chemical compounds used for deodorizers and disinfectants. It is nearly an ideal material for use in earth closets and in other receptacles for moist waste organic matter, and has a value far in excess of the cost of gathering and preparing it.

Dry peat, if free from sticks and lumps, may be successfully used for bedding for all sorts of live-stock, equaling for this purpose the more carefully-prepared peat or moss litter, because it possesses all of the properties of the litter. When used for bedding the thoroughly dried peat should be packed firmly to the depth of four or five inches on the floor of the stalls or standing room, at the back of which a retaining cleat should be nailed. If well prepared and kept clean, the litter will last without renewal for several months. It furnishes a standing room and bed which cannot be excelled, being spongy, elastic and absorbent, and keeping down the usual odors of the stable to a marked degree. Wet peat should not be used for this purpose.

As dry, fibrous peat is a good non-conductor of heat, it may be used satisfactorily to protect water pipes from freezing. The peat is probably superior to straw and similar materials commonly used, because it is more durable and, if properly dried, more absorbent; hence would not lose its insulating properties so quickly when laid in a wet place. The only preparation needed is drying, and manifestly the tough, spongelike turf, or uppermost layers of moss peat, would be especially desirable, because they afford large air spaces between the fibers, and thus give better protection than more compact material. Peat of this kind should also be good packing in refrigerators and icehouses and similar structures.

In Europe peat mull and peat litter prepared from moss and sedge peat have been used as the bases for the preparation of certain kinds of commercial stock foods. The chief ingredient in these preparations besides the peat is the uncrystallized residue, or molasses, from beet or other sugar factories. This molasses has a certain food value for fattening stock, but is difficult to feed because of its stickiness and liquid condition, and the peat is added to obviate these difficulties. Actual analyses, however, by reputable agricultural chemists show that this material has a twofold use—it is eagerly eaten by the cattle, and thus stimulates them to eat more than

they otherwise would of fattening food, and the peat itself adds a small amount of proteid substance to the food; the peat also neutralizes certain bad effects of the molasses, so that larger quantities may be eaten.

Although the weight of evidence gathered at agricultural experiment stations in the United States seems to show that condimental stock foods of the kinds usually sold are of the nature of stimulants, and do not give sufficient returns in actual gains in weight or condition of the animals to justify such use, the testimony as to the value of a mixture of molasses and peat mull as an addition to the ration of horses and other live-stock seems conclusive. Reports of its beneficial effects have been issued from time to time through a number of years from various European countries and from the army veterinarians of Germany and England.

Air-dried peat can be used to advantage for packing eggs, fruit and vegetables for storage either in bins, pits, cellars or other receptacles, or in refrigerating plants.

The non-conducting properties of fibrous peat keep articles packed in it at an even temperature and prevent freezing. In addition, peat prevents shrinking due to evaporation and quickly absorbs any water given off. Perishable articles packed in this material are not absolutely protected from decay, because the germs of the microscopic plants that cause decay are generally introduced before packing. Unaffected fruit, however, would not be spoiled by contact with that already inoculated, as is often the case in the usual methods of packing for storage, because peat is sufficiently antiseptic to prevent the growth of rot-producing fungi through it, and the reproducing bodies could not pass from point to point through it as they do through air spaces.

Large quantities of peat powder or mull are sent annually to the Canary Islands from Europe for use in packing fruit for shipment, and the demand for the material for the purpose is growing. There seems no good reason why the same substance should not be tried in the United States in connection with the shipment for long distances of the more perishable fruits.

A question often is raised as to the value of peat ashes. In general, it may be said that they are not nearly so valuable as those obtained from wood, as they contain a disproportionately large percentage of silica and very little phosphoric acid or potash. The silica probably comes from fine silty sediments in the water in which the peat was formed, and has practically no value in plant growth, although the most abundant constituent of most soils. The small proportion of other mineral constituents in peat ash can probably be attributed to the lack of the remains of woody plants, as the mosses and other herbaceous plants, which are the chief peat formers, do not usually accumulate as much mineral matter in their cell walls as do the shrubs and trees.

Therefore, while at times it may be advisable to burn over the surface of peat beds to remove quickly and cheaply the surface covering of vegetation, it is a great mistake to burn the peat for the sake of getting the ashes, as these are worthless for agricultural purposes in comparison with the high value of the peat itself for any of the uses that have been mentioned in this bulletin.

It is reported that peat with high ash in certain localities in Florida is burned in specially-built furnaces to obtain the ashes for making polishing powders and scouring soaps, the ash containing a large amount of silica in the form of very minute shells of one-celled plants known as

diatoms, which are so small that they do not produce visible scratches on polished metal, yet so hard that they scour it.

### Reclamation in Missouri.

[Louisville Courier-Journal.]

Between Cape Girardeau, Mo., and Helena, Ark., there are 240 miles of swamp covering some 8000 square miles of soil. Some years ago the question of draining this vast area was agitated, and as far back as 1893 Arkansas and Missouri began building levees along the Mississippi River to keep out the overflow. The Federal Government paid a part of the expense, and in 1907 the work, which embraced some 210 miles of levee, was completed and the Mississippi was shut out.

With the completion of the levees the work of drainage began to take practical form, and at present one of the greatest reclamation enterprises in the United States is under way. This undertaking is comprehended in two projects—the Little River drainage system and the St. Francis River system. The Little River ditch is known as "Missouri's Panama Canal," and is being dug at the rate of 50 miles a month, its cost being estimated at \$4,000,000. With its branches it will reclaim 500,000 acres of land almost incomparable in fertility. The St. Francis project is of still larger dimensions, and will reclaim some 1600 square miles of swamp. Its estimated cost is \$7,600,000.

The fame of Southeastern Missouri is spreading in consequence of its activity in drainage. It was no longer than 15 years ago that the first reclamation ditch was dug in New Madrid county. New Madrid and Mississippi counties constitute that section of Missouri which adjoins Kentucky, being separated therefrom by the Mississippi River. Both these counties have been the scene of extensive drainage activity. The original New Madrid county ditch is 20 miles long and 40 feet wide. Since its completion one drainage project has succeeded another with such rapidity that the aggregated length of the ditches has reached nearly 1000 miles and is constantly increasing. In all fully 400,000 acres of useless, inundated soil has been converted into tillable land capable of tremendous agricultural production.

Farther up the Mississippi River, in Cape Girardeau county, which adjoins Illinois, a diversion canal was dug 30 miles long by which the waters of six small rivers were diverted from the swamp to the Mississippi River. South of this canal lies the basin of Little River, which is now the center of operations. It is a swampy bottom 90 miles long and 10 to 20 miles wide. It has been under water "since the memory of man runneth not to the contrary." The project involves the digging of a channel 85 miles long with 600 miles of lateral ditches. This will straighten Little River, drain the swamp and carry the main channel to the now ambitious St. Francis River canal, which, in turn, will carry it on to the Mississippi River, near Helena, Ark.

Some of the results of these extensive drainage operations of the past 15 years are summarized by a special correspondent of the Kansas City Star. It is stated that New Madrid is the fastest growing county in Missouri, its population increasing 72 per cent. in the last decade, as shown by the census of 1910; that in the eight counties of Southeast Missouri the population increased 46,633 in the same 10 years; that Scott county increased 71 per cent.; that Pemiscot county increased 61 per cent., and all the others made a splendid showing; that many new towns have sprung up; that land near Maiden that sold six years ago for \$5 an

acre is now worth \$75; that land south of Morehouse valued in 1904 at \$2 an acre sold last summer for \$105 an acre; that a 40-acre tract in New Madrid county which was bought 10 years ago for \$1.25 an acre is now held at a figure in excess of \$75; that in the same county a man 10 years ago paid \$800 for 640 acres of land, selling it six years later for \$11,200, and that the present owner last year refused an offer of \$41,000.

The same correspondent tells a number of stories equally wonderful in regard to the fertility and producing power of the reclaimed land. Alfalfa yields five crops and on some farms three crops; onions, corn and peanuts are cultivated at one and the same time in alternate rows. The farmers harvest wheat in June and then sow cowpeas, which are gathered in September. The land is immediately plowed and wheat drilled in. This is pastured during the winter, the wheat is harvested the following June, and the same round repeated. In Dunklin county there is a colony of Catholics occupying 12,000 acres. Practically all this land was under water a few years ago, but is now producing splendid crops.

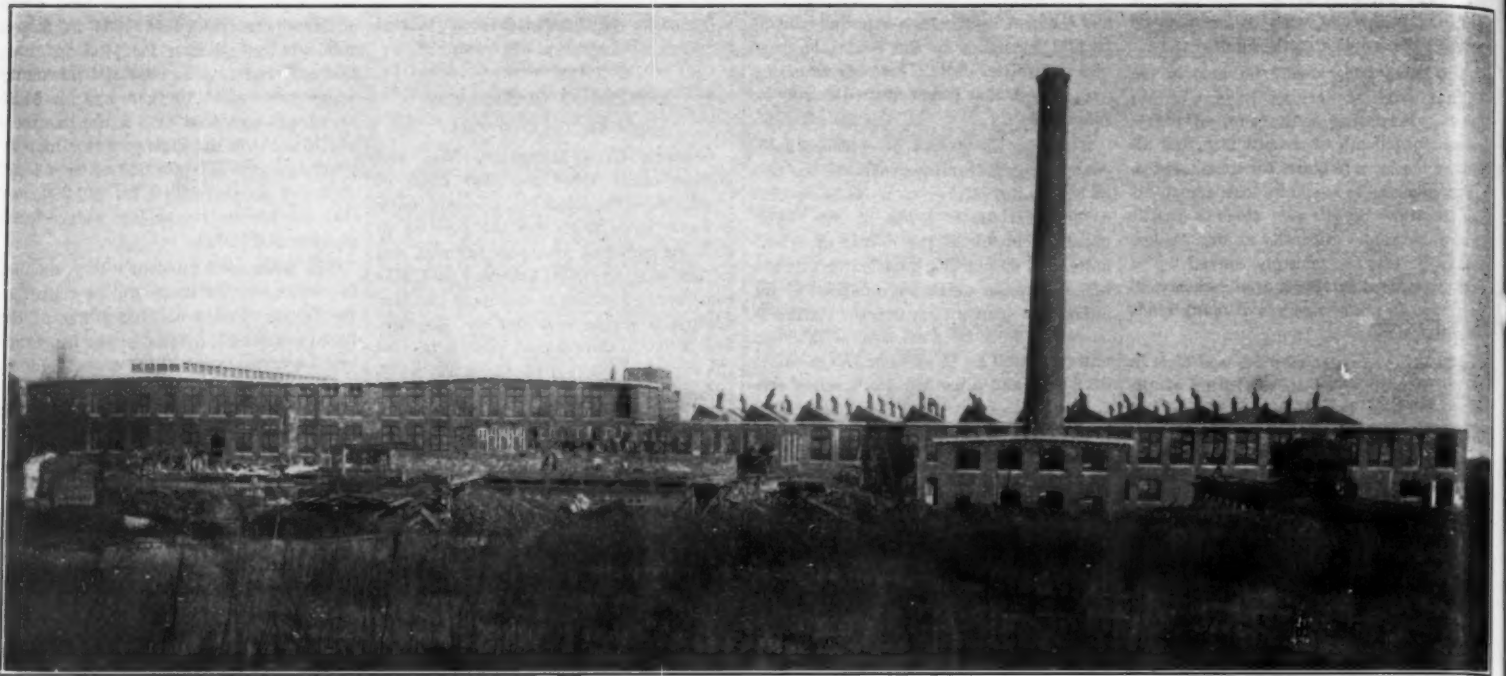
The development that has come about in Southeastern Missouri in consequence of these improvements is little short of marvelous. It is one of the best illustrations anywhere to be found of the possibilities of swamp reclamation.

### Reclaiming 25,000 Acres of Land.

A dispatch from Oregon, Mo., states that progress is being made with the construction of the canal to drain 25,000 acres of land in Holt county. This work was begun about a year ago, and will provide a seven-mile canal, 100 feet wide and 6 to 16 feet deep, with levees 10 feet high, the cost to be about \$150,000. The canal taps the Big Tarkio River about two miles from Corning, extending southwest between Corning and Craig, emptying to the southwest of Craig. This canal is really an artificial bed for the Big Tarkio River, and it will have 25 miles of laterals. The levees will be about 25 miles long. Referring to the land to be drained the dispatch states:

"In the past six or eight years but two profitable crops have been raised on these 25,000 acres of land, and in the past five years hardly a crop; on much of it scarcely a carload of grain has been produced from that immense body of land. Year after year these farmers, with new-born courage, have broken the ground, planted the seed, witnessed the sprouting of the grain, smiled, anticipating rich harvests, and yearly the floods have smothered the tender sprouts and buried the farmers' hopes beneath an inland sea of water. Such land, in such condition, is worse than valueless. It wastes a man's time. The soil of the Missouri bottom is as rich as that of the Valley of the Nile, and indestructible, and practically without bottom. A few big corn crops will not only put these owners in excellent financial shape, but will enhance the value of the land much more than the cost per acre for putting the ditch through.

"If half of this 25,000 acres were in growing corn it should yield 60 bushels per acre, or a total of 750,000 bushels annually, or 3,750,000 bushels in five years, worth, at 40 cents per bushel, \$1,500,000. Presuming that the total of wheat and other grains and garden stuff, horses, cattle, hogs, have an equal value to that of the corn, the district to be reclaimed has lost in the past five years a total value of \$5,000,000, or \$600,000 per year. These estimates are surely conservative."



THE WESTERVELT MILLS, GREENVILLE, S. C.

Company capitalized at \$1,000,000; will operate 50,000 spindles and 1200 looms, manufacturing India lawns and linens; plant nearing completion; two-story 130x423.6-foot carding and spinning department; one-story 301.4x231-foot weave shed, with saw-tooth roof; two-story 47.2x114-foot picker and slasher department; 48.8x66.4 boiler-room; three-compartment 102x154-foot warehouse.

### Louisiana's "Wood-Using" Industries

[New Orleans Times-Democrat.]

In its current issue the New Orleans *Lumber Trade Journal* publishes a report on "The Wood-using Industries of Louisiana," prepared by Mr. Hu Maxwell of the Federal Forest Service. Evidently prepared for publication and distribution by a department of the Forest Service, it is explained that no funds are available for the purpose and publicity is given it, therefore, through the columns of a trade journal. The great length of the article probably will prevent its being widely read, even by lumbermen, though it presents statistics interesting and valuable. The conclusion to be drawn from its findings seems to be that the State is getting out of its enormous lumber industry much smaller returns than might easily be derived if there were more "wood-using industries" within its boundaries to manufacture its forest products.

Notwithstanding the latest statistics of lumber production for the United States place the State of Washington a little in advance of Louisiana, Mr. Maxwell declares the "grouping of all known data for each State shows that Louisiana's forests yield more wood than those of any other State." He estimates the total Louisiana yield at 5,175,370,000 feet. Of this, "sawed lumber" contributes 3,551,918,000 feet. But of the sawed lumber total only 1,354,129,577 feet are "further manufactured" within the State. That is to say, by far the larger portion of the cut is shipped out of the State as rough lumber, to furnish raw material for wood-using industries in other States or countries. Of the quantity "further manufactured" in Louisiana, it appears that 1,223,205,894 feet are merely worked through the planing mills and then shipped outside as "dressed lumber." So that, out of approximately three and a half billion feet of lumber annually produced from the Louisiana forests, only about 132,000,000 feet are actually converted, by Louisiana industries, into other commercial product than lumber. Take from Louisiana's table of "further manufactured" the one item of "planing-mill products," points out the forest expert, "and its total would be lower than that of any other State where similar surveys have been com-

Do you want to know all about the South's material progress and its resources for future upbuilding?

Do you want your children, your clerks, your friends and business associates to know how wonderful a land the South is, that they may the more intelligently understand this section? Certainly, if you are a man, you do.

Do you want to know the real truth about the South and its resources as told by the ablest experts in America?

Do you want to be able "to give a reason for the faith that is in you" about the South's future?

Do you want to be able to form an intelligent opinion of how rapidly the South will advance in ten years, of the effect of this on country and city growth and values?

"Thirty Years of Southern Upbuilding" will meet all these points. If you are a subscriber to the *Manufacturers Record* on January 31 you will get a copy free. Read about it on page 51.

pleted" (he names seven of these, in other sections of the country) "and this in face of the fact that it is next to the highest State in lumber cut and perhaps exceeds every State in the total output of forest products."

The point is more clearly illustrated by a table comparing Louisiana furniture industry with that of the seven other States surveyed. Only 46 feet of Louisiana lumber per 100 acres of Louisiana forest, he declares, is manufactured into furniture by Louisiana factories; whereas in Illinois the proportion is 1897 feet to the 100 acres and in Massachusetts it is 1791. "Illinois furniture makers pay three times as much for their lumber," he adds, "and Massachusetts pays more than twice as much." In supply of native timber adapted to use in the industry, he shows that Louisiana is far ahead of "some of the States which are far ahead of it in furniture manufacture."

This industry is only one of a number in which similar comparisons would be possible. The manufacture of store and office fixtures in Louisiana utilized only 105,000 feet of Louisiana lumber. Mr. Maxwell considers it probable "that New Orleans alone uses more fixtures than the whole quantity reported manufactured in the State," yet he finds that a part of the Louisiana product in this line is exported to Mexico, Central America and South America and shipped to other States in this country. The forest expert's report

shows convincingly and conclusively, we think, that Louisiana is losing a great part of the benefits and profits derivable from its huge timber resources by shipping out so large a proportion of its lumber cut as raw material to build up the finishing industries of other States and countries—and by working up, in its own finishing industries, a proportion so small as to be comparatively insignificant.

### To Drain Georgetown County Land.

Engineer F. G. Eason of Charleston, S. C., has nearly completed his survey of the 20,000 acres of Georgetown county land to be drained by the Georgetown Farm Land & Homeseekers Co., W. D. Morgan, president, Georgetown, S. C. The property will be drained for division into farming tracts for sale to farmers who will guarantee to cultivate at least one-tenth of their purchases. Col. H. B. Springs of Georgetown, who attended the recent National Drainage Convention, referring to this drainage undertaking, is quoted as follows:

"This 20,000 acres of land lies from 4 to 10 miles out from Georgetown. It is mostly wooded, and when thoroughly drained, as the company proposes to do, it will comprise some of the most fertile farming land in the South, capable of growing any crop that can be raised within the borders of the State. It will cost from \$3 to \$5 per acre to drain it. It

will be divided into tracts of 25 acres each.

"The whole section will be traversed by roads from 40 to 60 feet in width. In fact, from 500 to 600 acres will be utilized for roads. The improvements made by the holders will be of a permanent nature. The very best machinery for dredging and road-building will be used, and when the improvements are completed the 20,000 acres will present as fair a picture of fertile farming land as will be found in the South.

"Georgetown has already begun to put into operation the plans outlined by the National Drainage Convention held recently in Chicago. Our people are wide-awake to the possibilities involved in this idea of draining the swamp lands. When the 20,000 acres are colonized with thrifty farmers, Georgetown will have added to her back country an invaluable asset. This section, which has lain idle for so many years, has been going through that process of nature which enriches the soil to such a degree that the waste places will blossom as the rose for several years without the use of one ounce of fertilizer."

According to the Texas Commercial Secretaries' Association, Texas cities in 1911 had \$6,236,000 invested in manufactures; raised railroad and industrial bonuses amounting to \$4,820,000; had 66 acres of land donated for public uses; had 188 acres turned into public parks; spent \$100,000 in advertising their advantages and opportunities, and issued \$6,684,000 in bonds for good roads.

The Interstate Chemical Co., William B. Chisholm, general manager, Charleston, S. C., has purchased the site for its Macon plant at \$15,500. This site comprises nearly 17 acres of land, and the construction of buildings will soon begin. These structures will include two for the fertilizer department, two for the acid department, office building and warehouse. Extensive railway yards will be provided.

Charles M. Brandon of Checotah in the boys' cotton-growing contest last year in Oklahoma raised on an acre of land 2869 pounds of seed cotton, which yielded 786 pounds of lint.

Wheeling, W. Va., made 133,000,000 stogies in 1911, valued at \$2,000,000.



## BIG HYDRO-ELECTRIC PROJECT.

London Syndicate Interested in Plan To Invest from \$20,000,000 to \$30,000,000.

[Special Dispatch to Manufacturers Record.]

New York, January 5.

There is reliable information here that a London syndicate has secured sites for hydro-electric development on the Coosa, Tallapoosa and Tennessee rivers in Alabama for the purpose of delivering power in Birmingham, Montgomery and other cities in the State. Development work will commence at once. These developments will involve an expenditure of from \$20,000,000 to \$30,000,000.

Detailed information as to the plans for this development nor the names of the interested parties cannot be made public at this time, but it is probable that this is the practical working out of the plans of the Alabama Inter-State Power Co., referred to in a previous issue of the MANUFACTURERS RECORD.

## TO DEVELOP ALABAMA POWER.

### Hydro-Electric Plans of Comprehensive Scope.

The Horne Alabama Railway & Power Manufacturing Co. of Montgomery has been incorporated with an initial capital stock of \$7500 and the following officers: President, Julius Horne of Milledgeville, Ga.; vice-president, W. H. Taylor of Montgomery; secretary-treasurer, Henry Horne of Macon. Detailing his company's plans, Henry Horne is quoted in an interview by the Birmingham Age-Herald, the essential statements being as follows:

"The study of the Alabama situation was begun about three years ago, and was the result of these matters being brought to my attention by residents of this State making investigations along the Coosa River. My attention was first called to certain power sites along that river by W. H. Taylor of Montgomery, who had obtained control of these sites. After I had inspected them I was so pleased with the outlook that I obtained the services of the Solomon Norcross Company of Atlanta to make a survey of the sites.

"This work brought out the information that W. P. Lay of Gadsden had been previously devoting several years studying the water-power possibilities of the Coosa River. At that time Mr. Lay had obtained, in connection with E. T. and G. H. Schuler of Gadsden and Hohenburg Bros. of Wetumpka, sites on the Coosa River known as locks 7, 12, 14 and 15. I bought the remainder of the sites on that river, namely, locks 18 and 19, thereby obtaining ownership of all the available sites on the river.

"The result of a careful investigation that has been going on for several years develops the fact that the Coosa River affords the greatest possible safety for an investment in water-powers than any stream in the United States except Niagara Falls, which is the greatest water-power in the world.

"The plans of the owners of these dam sites on that river are such that their development will produce, without storage, 300,000 horse-power. To this immense power is to be added the increase of the flow of water stored in North Georgia at the reservoir sites, contemplated to be developed by the Georgia Power Co. The immense storage basins that the Etowah reservoir will afford will have a tendency to increase the quantity of water-power to be obtained on the Coosa to 500,000 horse-power, and will serve the purposes of the Government to make the Coosa navigable to the Gulf the entire year.

"These developments within the next 10 years should make Birmingham the

foremost city of the South and Alabama one of the richest States in the Union, comparing its population to the measure of its wealth. During the past 15 years Henry C. Jones of Montgomery, Ala., who was instrumental in interesting capital to develop at Tallassee, near Montgomery, water-powers at that point now owned by the Montgomery Light & Power Co., has been devoting constant study of the power possibilities on the Tallapoosa River, whose ownership in connection with foreign capital and in connection with the ownership of myself and associates on same river have been able to plan for a development of at least 200,000 horse-power from that stream. Those associated with Mr. Jones in the ownership of certain properties on the Tallapoosa also are interested in developments on the Tennessee River known as Mussel Shoals, the power at this point being sufficient to develop the capacity of 100,000 horse-power. The investment that is ultimately contemplated in these powers for their development alone will easily reach an expenditure of \$50,000,000. This outlay will mean the enlargement of present manufacturing enterprises, the addition of new ones to an outlay of not less than \$100,000,000 additional. Rounding up as a result of these water-power developments an expenditure of not less, in the next 15 years, of \$150,000,000, and when one considers the immense benefit that this new money will mean to the development of this State, the increase of values that will result therefrom and the quantity of labor that will be needed to carry these enterprises on an idea can be formed of what is meant to result therefrom."

### Now Operating East Point Plant.

The Virginia Bridge & Iron Co. of Roanoke is now operating its new structural steel plant at East Point, near Atlanta. Referring to the completion of this plant the company writes to the MANUFACTURERS RECORD as follows:

"This plant is located between the main lines of the Atlanta & West Point and Central of Georgia Railways, and is provided with excellent shipping facilities, which enables it to render prompt and satisfactory service in deliveries. Our Atlanta officers are in a new and commodious office building erected at this plant, and the business of that territory is under the direction of J. W. Leroux, district manager. This new plant is equipped with the most modern power and fabricating equipment and excellent handling facilities, and has a capacity of 300 tons of finished product per month. In the triangular area next to the Atlanta & West Point Railroad we have provided a most attractive little park, in the center of which is an electric fountain, which area will be covered with grass and shrubbery, and is intended as a novel illustration of the neatness, care and accuracy exercised in the operation of the East Point plant. This plant was removed from Whitehall street, Atlanta, to East Point on account of the lack of room at the former location, to take care of our constantly-increasing business in that section, and it is expected that within a few months the plant will be operated continuously to its full capacity."

Industrial and commercial corporations to the number of 544 and with capital aggregating \$9,150,800 were added to Nashville's activities in 1911.

"Thirty Years of Southern Upbuilding" will claim the nation's attention. Have you ordered any extra copies. If not, read on page 51 "A Wonderful Story of the South's Wonderful Progress and Prospects" and send in your order at once.

## GOOD ROADS

### WEEK'S HIGHWAY RECORD.

#### Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

#### Bonds Voted.

Blountsville, Tenn.—Sullivan county voted additional \$200,000 bond issue for road construction.

#### Bonds to Be Voted.

Charlotte, Tenn.—Dickson county will vote February 17 on \$100,000 bond issue for road construction.

Cullman, Ala.—Cullman county will vote on \$350,000 bond issue for road construction.

Livingston, Tenn.—Overton county will vote February 23 on \$150,000 bond issue for road construction.

Sparta, Tenn.—White county votes January 27 on \$90,000 bond issue for road construction.

#### Contracts Awarded.

Brewton, Ala.—W. S. Kellar, State highway engineer, awarded contract at \$8000 for construction of nine miles of State-aid road.

Crowley, La.—City awarded contract for 118 concrete street crossings.

Greenville, Tex.—City awarded contract at \$1500 for paving on West Lee street.

Hamilton, Ala.—Marion county awarded contract at \$17,350 to construct road.

Jacksonville, Fla.—Duval County Commissioners awarded contract for paving New York avenue.

Jonesboro, Va.—Lee county awarded contract for grading and macadamizing five miles of road.

Lexington, Ky.—City awarded contract for resurfacing 3d street with asphalt.

Mobile, Ala.—City awarded contract at \$83,295 for wood block paving and at \$7660 for asphalt paving.

Port Arthur, Tex.—City awarded contract for 125,000 square feet concrete sidewalk and 25,000 linear feet concrete curb.

#### Contracts to Be Awarded.

Dade City, Fla.—Tampa Bay Land Co. will expend \$5000 to open and grade streets.

Helena, Ark.—City will pave street in Improvement District No. 6.

Houston Heights, Tex.—City receives bids until January 27 for paving Boulevard from White Oak Bayou to Nineteenth avenue with brick, creosoted blocks, asphalt, bitulithic or concrete.

Hugo, Okla.—City receives bids until January 16 for improving several streets.

Johnson City, Tenn.—City receives bids until February 1 for paving streets with brick, asphalt, bitulithic, wood block, granitoid or concrete and place concrete curb and gutter for Improvement District No. 9.

New Madrid, Mo.—King's Highway Road District receives bids until January 18 for construction of road.

Orange, Tex.—Orange county will expend \$200,000 on construction of gravel, shell or sand-clay roads.

Selma, Ala.—City opens bids January 19 for 1000 square yards vitrified brick, 2000 square yards cement pavement, 12,000 square yards wood block, etc.; about 4500 linear feet granite curb or combined curb and gutter, all necessary storm sewers, inlets, etc.

Teuacana, Tex.—Precinct No. 4 of Limestone county will construct 75 miles of rock road; cost \$50,000.

Waycross, Ga.—City will construct 45,000 yards cement sidewalks to cost \$50,000.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### GEORGIA RAILWAY & POWER.

#### Authority Given to Issue Securities Desired and Work Proceeds.

The Georgia Railroad Commission has amended the order recently issued by it with reference to the Georgia Railway & Power Co., and now permits it to issue all the securities requested, the effect of this reconsideration being to permit the issue of \$10,000,000 of second preferred stock, which the company said was essential to its plans, and which the commission several weeks ago denied.

Jack J. Spalding of Atlanta, a director in the company, and one of its counsel, is quoted in a report from there as saying that it will proceed immediately to fulfill its plans, which, it will be remembered, were described in the MANUFACTURERS RECORD of September 21 and 28 and October 25, 1911. They include the consolidation of several large hydro-electric plants and the building of a new electric railway, the latter near Atlanta. The capitalization of the company will be \$57,000,000, including \$15,000,000 of common stock, 2,000,000 of first preferred stock, \$10,000,000 of second preferred stock and \$30,000,000 of 5 per cent. bonds. The absorption of the Georgia Railway & Electric Co. of Atlanta is one of the principal features of the merger, which will have 300 miles of steel tower transmission lines for its power and light service. Charles Magee of Toronto, Canada, is president; Alex. C. King, vice-president; Forrest Adair, secretary-treasurer, both of Atlanta; George G. Moore of Detroit, Mich., and Jack J. Spalding completing the board.

It is understood that the financiers are now engaged upon the perfection of arrangements, and that the consolidation will be effected as speedily as possible.

Mr. Adair, the secretary and treasurer of the new company, has issued a statement calling attention to the fact that the payroll now amounts to about \$300,000 a month. At Tallulah Falls the dam is about 18 feet high, and is being rapidly completed. About three-quarters of a mile of the tunnel from the dam to the power plant is finished, and work continues to be pushed. The steel towers for the power transmission lines are being put up between Atlanta, Cartersville, Rome, Tallulah and Gainesville; also from Atlanta to Social Circle along the Georgia Railroad, and from Atlanta to La Grange, along the West Point route. They are 70 feet high.

At Tallulah the Southern Railway is relocating about three miles of its line to permit the full development of the water-power, and the reconstruction will be completed by spring.

The work at Tallulah will be only a part of the great enterprise. The Interstate Power Co. and the Atlanta Hydro-Electric Co., besides two others at least of the several concerns included, will proceed with construction of dams, power-houses and plants, water-wheels and generators. The power at Tallulah is expected to be available by July 1 next. Survey has already begun for the electric railway from Decatur to Stone Mountain.

### LYNCHBURG TO DANVILLE.

Capt. T. A. Troy, Who Built the Virginia Air Line, Plans a New Road.

The Lynchburg, Carolina & Danville Railway Co. has been granted a charter in Virginia to build a line about 125 miles long from a point on the Chesapeake &



Ohio Railway near Lynchburg to a point on the North Carolina boundary near Milton, and it may be extended to Greensboro, Durham and other places in North Carolina. Although Capt. T. A. Troy of Amherst, Va., heads the list of officers as president of the new company, and it was he who planned the Virginia Air Line through Fluvanna county, that is now operated by the Chesapeake & Ohio, it is denied that the latter is in any way interested in the new venture, which would parallel the Southern Railway between Lynchburg and Danville. The capital stock is only \$25,000. The other directors of the new company are W. P. Read, secretary; J. E. Bowman, Edward Meeks and L. B. Davies, all of Amherst, Va.; A. B. Carrington, W. R. Fitzgerald and R. A. James, all of Danville, Va. Headquarters will be at Amherst. It is expected that survey will begin by January 15. A proposition to build such a line as is proposed was made some time ago, but was never fulfilled. Last year a company was incorporated by others to build from Danville to Durham, Gilbert C. White of Durham, N. C., being president.

#### New Equipment, Rails, Etc.

The Piedmont Traction Co., which is building the big interurban electric railway between Charlotte, Gastonia and King's Mountain, N. C., and Spartanburg, Greenville, Anderson and Greenwood, S. C., has received at Charlotte the first of the large electric locomotives that it will use in freight service. The electric machinery of the engine was built by the Westinghouse Electric & Manufacturing Co. of Pittsburgh, and the rest of it by the Baldwin Locomotive Works, Philadelphia.

The Rock Island lines are reported contemplating the purchase of 45 Mikado type locomotives. They are also said to have ordered 15 cabooses from the Mt. Vernon (Ill.) Car Manufacturing Co.

The Pennsylvania Railroad's rail order for 1912 will, it is said, amount to about 130,000 tons.

The St. Louis, Iron Mountain & Southern Railway of the Missouri Pacific system is reported to have filed an equipment agreement in Louisiana covering 11 locomotives, 21 passenger cars, 500 flat cars, 900 stock cars and 2000 gondola cars, all the freight equipment having steel underframes. This is provided for by \$2,900,000 of 5 per cent. equipment notes.

The Baltimore & Ohio has purchased 500 tons of bridge steel from the McClintic-Marshall Construction Co., Pittsburgh.

The Southern Pacific Railway is reported to have ordered 14 all-steel combination baggage and mail cars and six all-steel baggage cars.

The Pennsylvania Railroad is reported to have placed car orders thus: Cambria Steel Co., Cambria, Pa., 1000 coke cars, class H-21; 200 coke cars, class H-22; Pressed Steel Car Co., Pittsburgh, 1000 coke cars, class H-22; American Car & Foundry Co., St. Louis, 1000 gondola cars, class Gra; Standard Steel Car Co., Pittsburgh, 800 coke cars, class H-22.

#### St. Louis Belt Plan.

The St. Louis County Belt Railroad Co., promoted by James D. Houseman of St. Louis, Mo., proposes to build a belt line from Carondelet for 65 miles and connecting with a proposed new bridge over the Mississippi River below the mouth of the Missouri. From St. Louis it would run from the river in the southern part of the city and northwest to Shrewsbury, west to the North and South road, north to Clayton, University City and Ferguson, then east and north to the Chain of Rocks, and then to the bridge. Crossing the

river, it would reach coal fields at Mt. Olive, Ill.

Franchises have all been obtained, Mr. Houseman is quoted saying, but financing is yet to be secured. The line would connect with 24 railroads entering St. Louis. Electricity would be used for operation. He also proposes an electric railway to Hannibal, Palmyra, Shelbyville and Mercerville, Mo. In connection with his plans he has prepared and published a map showing electric railways in 11 States from New York, New Jersey, Pennsylvania and Maryland on the east to Iowa and Missouri on the west.

#### Western Maryland's Progress.

The Western Maryland Railway's issue of 3½-year 5 per cent. notes having been approved by the Maryland Public Service Commission, the company will proceed to carry out its plans for improvements at Hagerstown and Cumberland, Md., and the building of additional trackage both in yards and main line as soon as possible. It is understood that 15 miles of second track will be constructed between Williamsport and Hancock, Md., and that six passing tracks will be built between Hancock and Cumberland, Md. Construction continues in rapid progress at Port Covington and Hillen stations in Baltimore. At the former 20 additional tracks are being built. The new pier now under way will be completed in the spring.

Reports as to the construction on the Connellsville extension show that 99 per cent. of the grade is finished, as is 98 per cent. of the concrete work. There are 55 miles of main line track, 14 miles of second track and 7 miles of passing tracks down. On the bridges 95 per cent. of the superstructure is in place.

#### On the Lake Okeechobee Road.

The Florida East Coast Railway is reported to have completed about 60 miles of grade on its extension from Maytown to Lake Okeechobee, Fla. This new road will be about 125 miles long, and already 30 miles of track are laid. Its southern terminus will be at Tantie, Fla., on a creek several miles from the lake, into which the stream empties. This place, it is said, will hereafter be known as Okeechobee, and a new town will be built there. Survey of the tract for the town-site will begin immediately, with P. F. Jenkins as engineer in charge. A company is to be organized to develop the town and also other points along the line.

Okeechobee is said to be 30 or 35 feet above sea level, and will be the center of a fishing business in which many men are engaged at the lake. There are said to be many orange and grape-fruit groves in the region round about, and a general agricultural development is expected to follow the coming of the railroad, which is now in operation to Chuluota, about 23 miles southwest of Maytown.

#### Alabama Electric Railway.

The Horne-Alabama Railway & Manufacturing Co. has filed incorporation papers at Montgomery, Ala., which will be its headquarters. Authorized capital stock is \$30,000. It is proposed to make electric power, to operate a railway, to build dams and power-houses, factories, mills, bridges, foundries, shops, depots, warehouses and other buildings. Julius A. Horne of Milledgeville, Ga., is president; W. H. Taylor of Montgomery, Ala., vice-president, and Henry Horne of Macon, Ga., secretary and treasurer, the latter having 73 shares of stock and the others one share each.

#### Railroad Mileage in Texas.

The annual report of the Texas Railroad Commission covering the fiscal year

ended June 30, 1911, shows 14,326 miles of main line and branches in the State, an increase of 506½ miles as compared with the last fiscal year. Yard tracks and sidings amount to 3535¼ miles additional, an increase of 126¼ miles. Ninety-nine railroads and five express companies are covered, but not logging railroads, trams or electric railways. All railroads in Texas are standard gauge excepting 22½ miles of narrow gauge. Gross earnings were nearly \$90,000,000, an increase for the year of over \$4,200,000. Income from operation was \$22,675,265, a decrease of less than \$44.

#### New Depot at Middlesboro.

[Special Cor. Manufacturers Record.]

Middlesboro, Ky., January 8.

The Louisville & Nashville Railroad and the Southern Railroad have announced that they will begin work at once on a new passenger depot at Middlesboro. The city has a population of over 8000, and the passenger traffic is becoming very heavy owing to the 63-mile extension in the new Harlan district adding two more passenger trains to be dispatched out of Middlesboro. It is not announced what the depot will cost, but it will be modern in every respect, with a number of additional tracks sufficient to accommodate the traffic for a number of years hence.

The Louisville & Nashville Railroad Co. has occupied its new shop buildings at Boyle's, near Birmingham, Ala. Their construction began about two years ago.

## TEXTILES

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

#### Two \$250,000 Capital Increases.

The Simpsonville (S. C.) Cotton Mills has voted an increase of capital stock from \$500,000 to \$750,000, and the Fountain Inn Manufacturing Co. from \$300,000 to \$550,000. These companies were mentioned in November as proposing these increases. The Simpsonville plant operates 25,000 ring spindles and 600 looms, while the Fountain Inn plant has 15,000 ring spindles, 400 narrow looms and 60 broad looms. Print cloth is the product.

#### A \$250,000 Increase.

The Eagle & Phenix Mills of Columbus, Ga., has increased its capital stock by \$250,000 and is installing additional machinery recently purchased. This company has 59,356 ring spindles, 1728 looms, etc., driven by water-power, manufacturing colored cottons, denims, ball twine, etc.

#### Textile Notes.

C. B. Armstrong of Gastonia, N. C., has purchased the Dallas (N. C.) Cotton Mills at \$20,000. This plant has 4160 spindles and 116 looms.

The Gambrill & Melville Mills Co. of Havre de Grace will undertake repairs and improvements to its plant of 265 broad and 135 narrow looms for manufacturing damask, etc.

#### Improvements Costing \$75,000.

The Pratt Consolidated Coal Co. of Birmingham writes the MANUFACTURERS RECORD that it will improve its Flat Creek mines at a cost of about \$75,000, the betterments to include a new prison, hospital, bathhouse and other accessories for about 300 convicts. The company is also building a screening and sizing plant, picking belts, a coal washer and storage plant.

## LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

#### Completing a \$750,000 Plant.

The American Lumber Co. will soon complete the plant it has had under construction at Merryville, La. This plant will represent an investment of about \$750,000, and includes the new (No. 2) 70x102-foot sawmill equipped with two circular saws and a 52-inch gang saw driven by a 30x48 Corliss engine furnished with steam from a battery of eight 72x18 and one 84x18 boilers, which also furnish steam for the five-room concrete construction kiln, each room containing 25,000 feet of pipe and the water being condensed for return to boilers. The planer is 700x200 feet, and contains 12 machines driven by a 29x41 engine furnished with steam from four boilers 18x72 each. Mill No. 1 was built five years ago, and has two circular saws and planer. The total capacity of both mills will be 350,000 feet per 10 hours. The drying sheds, six in number, have a capacity of 9,000,000 feet of lumber. About 225 houses have been erected for the employees, 800 men to be required. The logging machinery includes three loaders, two skidders and four locomotives, now logging two miles from the mill. The American Lumber Co. is a consolidation of the Orange Lumber Co. and the C. L. Smith Lumber Co., Sam Park of Houston, Tex., being president. It owns 67,000 acres of long-leaf pine timber land.

#### To Develop Arkansas Timber Land.

Referring to reports that he has purchased Arkansas timber lands, A. Mass of Memphis wires the MANUFACTURERS RECORD as follows: "The Delta Land Co. has purchased 30,000 acres of land in Desha and Phillips counties, Arkansas, at a cost of \$400,000. The timber will be logged by the Arkansas Logging Co., with headquarters in Memphis. T. W. Safge will have charge of logging operations. A steel tramway 11 miles in length will be laid through the property. It will extend from the M. H. & L. Railroad to Jarbo Spur. Negotiations for laying this track are now being carried on. One mill is being operated by the Highland Lumber Co. at Jarbo, and other mills will be probably located on the property. It is proposed to develop the land for farming as soon as the timber is cleared."

#### Big Plant Nearly Completed.

The Robinson Brothers Lumber Co. of Robinwood, Miss., has incorporated with \$100,000 capital stock, and C. W. Robinson is president. It has nearly completed its big plant, and will soon begin to manufacture. This establishment comprises sawmill, dimension mill, planing mill, drykilns, etc., for a daily output of 60,000 feet of hardwood lumber and 15,000 feet of wagon and furniture dimension stock.

#### To Develop Mississippi Timber.

Messrs. Hand & Jordan of Hattiesburg and Hub, Miss., operating a large mill in the latter town, have acquired 7000 acres of virgin pine timber located about five miles from Purvis, Miss. They will develop this property, it being estimated that the timber will cut approximately 8,000,000 feet of lumber. A modern mill with drykiln will be erected, the daily capacity to be 25,000 feet of lumber.

The South Carolina Drainage Association has been organized with Messrs. E. J. Watson, president; S. G. Stoney, first vice-president; A. W. Marchant, secretary; Thomas O. Lawton, treasurer, and Reid Whitford, engineer.

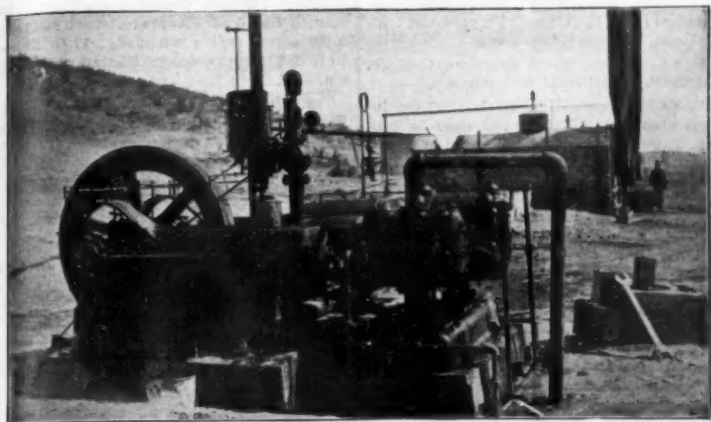


# MECHANICAL

## "Chicago Pneumatic" Air Compressors.

The extensive and increasing use of air compressors in various industries and

noted verifies its claims that its compressors are so designed and constructed as to meet emergencies and to give regular continuous service wherever demanded. The company publishes a complete series of bulletins describing in detail all types of "Chicago Pneumatic" compressors for air



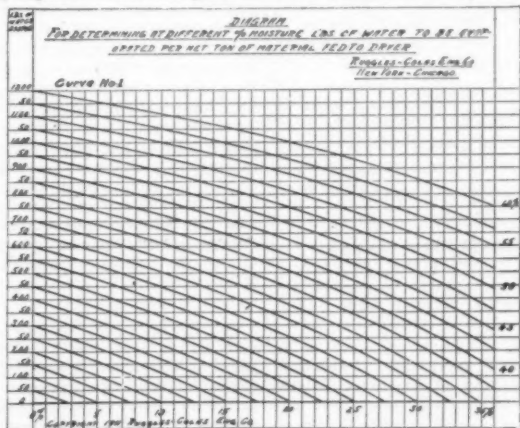
"CHICAGO PNEUMATIC" AIR COMPRESSOR IN OPEN FIELD.

under difficult conditions makes of particular interest the mention of special cases in which they have been successfully used. The accompanying illustration shows a "Chicago Pneumatic" air compressor operating in the California oil fields at Moron. It is used for air lift pumping under exceedingly difficult conditions, being located in the open, exposed to the full glare of

and gas. These bulletins and full specifications will be sent upon request.

### Diagrams for Use in Connection with Drying Cement Rock, Etc.

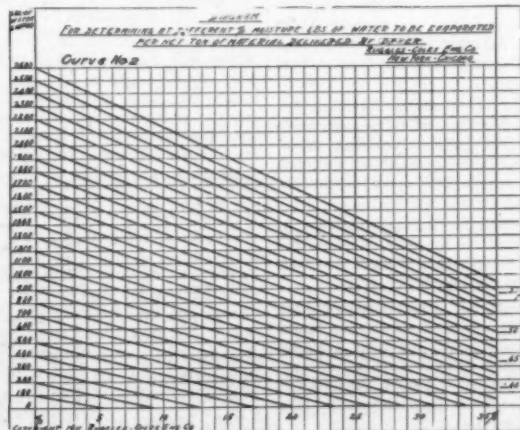
Operators of cement plants and others using dryers for treating cement rock, clay and the coal, so that it may be pulverized and made ready for the kilns, will



the sun, where the temperature runs from 105 to 125 degrees F., and where the slightest breeze carries dust and sand upon the machine. Under these trying conditions it is stated that the compressor operates 24 hours per day and is proving satisfactory to the purchaser in every respect.

The machine is a compound steam two-stage air cylinder, with mechanically-

find the diagrams shown herewith of interest. The amount of water to be evaporated in reducing a given weight of material from one percentage of moisture to another is often desired to be known quickly. The curves shown on these diagrams prepared by the engineering staff of the Ruggles-Coles Engineering Co., 50 Church St., New York, fill this need.



moved intake valves, and is equipped with complete gravity lubricating system with drip return. A small pump lifts the oil from the drip pan to the reservoir above the machine. The Chicago Pneumatic Tool Co., Fisher Building, Chicago, with a branch at 3 S. 20th street, Birmingham, considers that this successful operation of its air compressor under the circumstances

Blueprints of diagrams will be sent on request to the company.

To make the use of these curves clear, take a specific case of reducing cement rock from 6 per cent. moisture to 1 per cent. Referring to curve No. 2, follow the diagonal opposite 6 per cent. at the bottom until it intersects the ordinate of 1 per cent. Then follow across to left

and the figure 140 pounds is the amount of water to be evaporated per net ton of the cement rock delivered by dryer. Curve No. 1 is used in the same way, and from it can be determined the number of pounds of water to be evaporated per net ton of material fed to dryer.

### Universal Concrete Ties in Service.

The structural features and the excellent condition of the Universal reinforced

cracked or wind-checked; but the rails have made no appreciable depression into the wooden blocks, and they appear good for many years of service yet. Changing these blocks is a very small matter, both as to labor and expense of new blocks, since the change is made without in the least molesting the ties or the rail.

The difference in the appearance of some of these ties is due to the fact that a number were removed several months after



Galveston, Texas, Dec 23d, 1911.

TO WHOM IT MAY CONCERN.

I hereby certify that I made these Photographs of the Concrete Ties at Edgewater, Texas, on the Southern Pacific Road on Thursday, December 21st, 1911, and they are a true Photograph of same.

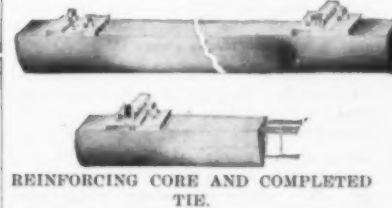
*J. H. Marshall* Photographer.

### PERCIVAL CONCRETE TIES LAID IN 1906.

concrete ties that have been under the main line of the Southern Pacific Railroad in Texas since October 22, 1906, are shown in the accompanying illustrations. Reports from the maintenance of way department of the Southern Pacific system state that although they have had no repairs, nor has the spiking or rail fastening

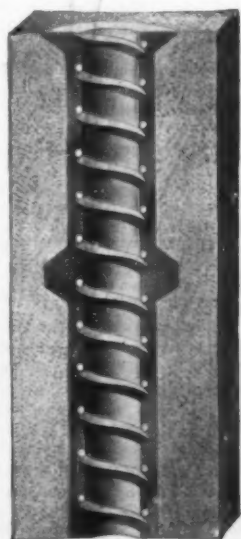
they were installed and new ones substituted on account of one end of a few having been disfigured when there was a disastrous wreck of a heavy loaded freight train occurring on the wooden ties just before the train reached the concrete ties. A large number of loaded cars, including a loaded oil tank car, left the rails and passed over these concrete ties, chipping off one end of about 25 per cent. of them so badly as to make their appearance objectionable, but causing no variation in the gauge of the road or in the alignment of the track. It was several months afterwards that these ties were taken out and new ones of a slightly different shape substituted.

The Universal Concrete Tie Co., Whit-



REINFORCING CORE AND COMPLETED TIE.

### LATERAL SECTION OF REINFORCED SOCKET IMBEDDED IN CONCRETE TIE.



SCREW SOCKET IMBEDDED IN CONCRETE TIE.

device ever been tightened since their installation, more than five years ago, they are now in proper alignment and adjustment. The cushions or heavy wooden blocks under the rail are the same that were put in at the time the ties were installed, and are, according to reports just at hand, entirely sound, though naturally

ney-Central Building, New Orleans, which controls the patent for these ties, has been capitalized at \$200,000, and plans to immediately erect a manufacturing plant in which to make the sockets shown in one of the illustrations, into which the screw spikes secure the rail to the reinforced concrete tie through the heavy wooden block, and also to fabricate the cores or reinforcement of the ties proper, as shown in the small illustration. These metal parts will be manufactured and shipped in car lots to the point where the ties are to be used, and there the concrete ties will be formed and cured, preparatory to installing. This economy of handling and of constructing where used is an important feature of these ties.

# Construction Department

## TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

### BRIDGES, CULVERTS, VIADUCTS

Ark., Lake Village.—Chicot County awarded contract to Vincennes Bridge Co., Vincennes, Ind., to construct bridge across Bayou Macon on Eudora Grand Lake Rd.; 208 feet long; two 54-foot and one 100-foot span. Address County Commissioners.

Ga., Dublin.—Laurens County Commissioners postponed election for voting on \$300,000 bond issue for bridge and road construction. (Recently noted.)

La., New Orleans.—Midland Bridge Co., Kansas City, Mo., is lowest bidder at \$22,900 for construction of bascule bridge over Bayou St. John at intersection of Hagan Ave.; Charles R. Kennedy, Comptroller.

Mo., Rolla.—Missouri, Arkansas & Gulf Railroad Co., Gilbert Lay of St. Clair, Mo., president, will construct three wooden bridges near Rolla on proposed railroad from Rolla to Bakersfield, Mo.; 150, 120 and 100-foot structures.

Miss., Aberdeen.—Monroe County Supervisors, C. P. Smith, clerk, received bids until January 6 for building approaches to bridge over Buttahatchie River according to plans and specifications by Southern Bridge Co., Birmingham, Ala., for steel structure, or by J. W. Mathis, Jackson, Miss., for cable steel structure.

N. C., Salem, P. O., Winston-Salem.—Winston-Salem Southbound Railway, H. E. Fries, president, Winston-Salem, N. C., will construct bridges at Linden and Walnut Sts. (Recently mentioned.)

Tenn., Gallatin.—W. H. Spradlin, chairman of Bridge Commission, Nashville-Gallatin Interurban Railroad Co., states plans are not ready for constructing recently-noted iron and concrete bridge; bids will not be open before April 1.

Tenn., Johnson City.—City will construct bridges for Improvement District No. 9; bids received until February 1; P. F. McDonald, City Commissioner. (See "Machinery Wanted.")

Tenn., Livingston.—Overton county will construct bridge across west fork of Obeds River, to cost \$2500 to \$3000. Address County Commissioners.

Tenn., Rock Island.—Great Falls Power Co., A. J. Dyer, president, Nashville, Tenn., received permission from Warren and White counties to raise several bridges above pond level of back water from dam on Caney Fork River; work by Nashville Bridge Co., Nashville, Tenn.

Tex., Cleburne.—Justice Precinct No. 1 of Johnson county contemplates voting on \$300,000 bond issue for bridge and road construction. Address County Commissioners.

### CANNING AND PACKING PLANTS

Md., Springfield.—John Berberick, Bowie, Md., and others will organize company to establish cannery.

Mo., Nevada.—Hill Packing Co. incorporated with \$35,000 capital stock by E. T. Letton, C. S. Ryburn, F. Davis and others.

Md., Springfield.—John Berberick and others contemplate establishing cannery.

Mo., Joplin.—O. M. Campbell, Kansas City, Mo., and associates purchased 16 acres on which to establish packing plant and stockyards; company will be organized with \$100,000 capital stock.

S. C., Charleston.—Carolina Fish Co. incorporated with \$3000 capital stock by Thomas W. Carroll and J. N. Matthews, Jr.

S. C., Columbia.—Armour & Co. (main offices, Chicago, Ill.) will, it is reported, rebuild burned plant; M. B. Minton, local manager.

### CLAYWORKING PLANTS

Ky., Olive Hill.—Fire Brick.—Olive Hill Fire Brick Co. will erect building; require 350 tons structural steel; awarded contract to McClintic-Marshall Construction Co., Pittsburgh, Pa. (Previously reported incorporated with \$400,000 capital stock by W. A. MacCorkle and others.)

S. C., Miles Mill.—Brick.—Sunnybrook Brick Co. incorporated with \$10,000 capital stock by Henry F. Lee, R. H. Johnston, J. C. Bauman, Y. M. May and T. S. Millford.

### COAL MINES AND COKE OVENS

Ala., Drifton.—O'Rear Coal Co. incorporated with \$2000 capital stock by Calne and Guy V. O'Rear and Ernest Lacy.

Ala., Birmingham.—Isthmian Coal & Trading Co. incorporated with \$5000 capital stock by F. W. Hopkins, J. W. Lewis and M. O. Hopkins.

Ala., Flat Creek.—Pratt Consolidated Coal Co., Birmingham, Ala., will improve Flat Creek mines at cost of about \$75,000. Erskine Ramsay, first vice-president, states improvements will consist of new prison, hospital, bathhouse, etc., for 300 convict miners; also building screening and sizing plant, picking belts, coal washer and storage plant. (Previously noted.)

Ala., Nauvoo.—Nauvoo Consolidated Coal Co. incorporated with \$12,000 capital stock by R. S. Shook, A. S. Tubb and E. M. Martin.

Ky., Harlan.—Clover Fork Coal Co. purchased coal land and will develop. (Recently reported incorporated with \$50,000 capital stock by A. F. Whitfield and others.)

Ky., Robard.—M. V. Denton, Mrs. Nannie V. Cottingham and O. W. Rash, Henderson, Ky., purchased for \$93,335 Southern Coal & Transportation Co.'s property, consisting of coal mine, several acres of surface and 7871.74 acres of coal rights.

Ky., Warren.—Brush Creek Mining & Manufacturing Co., R. L. Wheeler, general manager, is developing coal mine known as Dean vein; will increase capacity, by August 1, to 600 tons; install additional machinery, including compressors and motors, about March 1. (See "Machinery Wanted.")

North Carolina, Chatham County.—Wm. A. Guthrie, Durham, N. C., purchased Cumnock coal mine property at \$60,000; purchase re-

ported to be for Philadelphia parties; 2700 acres.

Va., Wise.—Lipps Coal Co. incorporated with \$15,000 capital stock; C. P. Addington, president; W. H. Lipps, vice-president; M. E. Lipps, secretary-treasurer.

W. Va., Blaine.—North American Coal Co. will develop additional coal mines.

W. Va., Philippi.—Humphreys Coal Co. incorporated with \$10,000 capital stock by William J. Faux and Guy L. Wheaton of Philadelphia, Pa.; I. A. Boucher of Beverdale, Pa.; D. Perry Stanton of New York, and John E. Evans of Ebsburg, Pa.; main offices in Harrison Bldg., Philadelphia, Pa.

### CONCRETE AND CEMENT PLANTS

Mo., St. Louis.—Concrete Products.—Concrete Roofing Tile Co. incorporated with \$5000 capital stock by William Conway, Kirkwood, Mo.; P. E. Briscoe of St. Louis; B. N. Brown, Ironton, Mo., and others.

Tex., Alpine.—S. L. Tilford, San Antonio, Tex., contemplates establishing cement plant; proposes development of cement deposits near Alpine.

Tex., Palestine.—J. L. Meyer, proprietor of Crown Bottling Works, will not erect concrete and brick plant as recently reported; will erect brick and concrete structure for bottling plant. (See "Miscellaneous Factories.")

### COTTON COMPRESSES AND GINS

Ga., Columbus.—Lummus Cotton Gin Co., E. L. Lummus, president, awarded contract to M. J. C. Pollard, Columbus, to erect metal-working shop and warehouse; 200x75 feet; two stories; mill construction; plans by T. W. Smith; cost of machinery (purchased) \$7000 to \$8000. (Recently noted.)

Tenn., Nashville.—Middle Tennessee Gin Co. incorporated with \$4000 capital stock by P. Rand, G. S. Salway, L. F. Jackson, J. F. Campbell and A. J. Porter.

Tenn., Nashville.—Middle Tennessee Gin Co. incorporated with \$4000 capital stock by P. Rand, G. S. Salway, L. F. Jackson and others.

### COTTONSEED-OIL MILLS

Ala., Montgomery.—Southern Cotton Oil Co. will rebuild by company force cottonseed hullhouse reported burned.

N. C., Zebulon.—Zebulon Cotton Oil Co., R. R. Creech, manager, main office 11 Broadway, New York, will rebuild seedhouse; 30x100 feet; ordinary construction; cost \$2000; machinery purchased; daily capacity 20 tons of cottonseed. (Recently reported burned.)

### DRAINAGE AND IRRIGATION

Ark., Little Rock.—Drainage District No. 3 awarded contract to R. H. & G. W. McWilliams, Chicago, Ill., for proposed drainage of 121 square miles; ditch to be 40 feet wide at bottom; earth removed to be used in building roads; cost \$47,000; to be completed in eight months.

Ark., Little Rock.—Fourche Drainage District Commissioners invite bids for construction of drainage system to reclaim 86,000 acres of land; reported cost \$50,000; plans by Lund & Hill, engineers, Little Rock. (Previously mentioned.)

D. C., Washington.—Drainage Division, Department of Agriculture, submitted report to James Wilson, secretary, advocating drainage of Sycamore bottom lands of Potomac River; survey covers 2300 acres; estimated cost \$29,000.

Mo., Clarence.—Valley Drainage District of Shelby county will let contract to drain and improve 6000 acres of land; Edward Roy, secretary. (See "Machinery Wanted.")

N. C., Dover.—Mosely Creek Drainage District (previously noted to vote on \$42,000 drainage bond issue) will construct drainage canals; bids opened February 16; R. R. Eagle, engineer, Newbern, N. C.; G. V. Richardson, chairman of Board of Commissioners. (See "Machinery Wanted.")

N. C., Raleigh.—City is considering drainage of land south of Raleigh; formation of drainage district is suggested; reported that Engineer R. B. Senwell is making investigations.

S. C., Georgetown.—Georgetown Farm Land & Homesteaders' Co., W. D. Morgan, president, will soon have surveys completed by F. G. Eason of Charleston, S. C., for draining 20,000 acres of land; will construct canals and build roads 40x60 feet wide; will utilize

500 to 600 acres for roads. (Previously mentioned.)

S. C., Hampton.—Black and Boggy Swamps Drainage District, Hampton county, has appointed Board of Viewers; district embraces 60,000 acres; survey not made; T. G. Eason, United States Drainage Engineer, Charleston, S. C.

Tex., Austin.—State Levee and Drainage Board directed Arthur Stiles, State Commissioner, and R. G. Tyler, engineer, to make survey of State penitentiary lands preparatory to construction of drainage system; proposed to reclaim about 30,000 acres by construction of levees and canals; will probably also install irrigation plant.

Tex., Grand Falls.—Grand Falls Mutual Irrigation Corporation (chartered with \$650,000 capital stock and consolidating several companies) has, it is reported, arranged financing its enterprise with Adams, Candee & Co. of Chicago; plans to complete canals and reservoirs, reconstruct and enlarge present system to irrigate 20,000 acres land.

Tex., Port Arthur.—City awarded contract to John T. Greland & Co. to deepen drainage canal.

### ELECTRIC PLANTS

Fla., Madison.—City voted \$30,000 bond issue to purchase local light and water plants. Address The Mayor.

Ga., Americus.—City will vote on \$60,000 bond issue for electric-light plant. Address The Mayor.

Ga., Macon.—Macon Railway & Light Co. appropriated \$10,000 for extension of electric-light system, \$10,000 for building substation, \$5000 for rebuilding machine shop, \$5000 for machine-shop tools, \$15,000 for building carpenter and paint shops, \$15,910 for double-tracking and rebuilding tracks in pavements, \$22,970 for paving, etc.; total amount of appropriations \$219,000; J. T. Nyhan is general manager.

Ga., Washington.—City rejected bids for construction of power plant and improvement and extension of electric light and power transmission system; will receive new bids until January 22 (not January 20 as recently noted); plans by Westinghouse, Church, Kerr & Co., engineers, New York; Boyce Ficklen, Jr., City Clerk. (See "Machinery Wanted.")

Ky., Frankfort.—T. Lindsey Fitch, Louisville, Ky., is promoting organization of company to consolidate electric-light and gas companies in Kentucky cities; four companies already acquired—Capital Gas & Electric Co. of Frankfort, Bowling Green Gas & Light Co. of Bowling Green, City Light Co. of Hopkinsville and Owensboro Gas Light Co. of Owensboro; consideration \$750,000; Owensboro company manufactures and distributes gas exclusively; contemplates making improvements, including additional gas mains, poles and wiring.

La., La Fayette.—Southwestern Traction & Power Co., New Orleans, La., will proceed with plans to construct two light and power plants, traction lines, etc., from La Fayette to Berwick Bay; F. W. Crosby of New Iberia, La., is president.

Okla., Muldrow.—J. W. Coker and W. J. Miller will construct electric-light system; Fort Smith Light & Traction Co. of Fort Smith, Ark., has contracted to furnish electricity; contract for constructing transmission line awarded to Western Engineering Co., Oklahoma City, Okla.; distance from Muldrow to Fort Smith, 10 miles.

Tenn., Lexington.—City engaged Richard C. Houston, Memphis, Tenn., to make surveys and superintend construction of electric-light plant, sewer system and water-works; estimated cost \$10,000. (City previously noted as to have voted bond issue.)

Tex., Beeville.—Beeville Manufacturing Co. (recently noted to increase capital stock to \$100,000) will install 20-ton ice plant and 120 alternating current generator; bids opened February 1. (See "Machinery Wanted.")

Tex., Decatur.—City voted \$15,000 of bonds to purchase and repair water-works and electric-light plant. Address The Mayor. (Recently noted.)

Tex., Port Lavaca.—W. E. Shell & Co. have franchise to construct electric-light plant.

Va., Floyd.—Floyd Electric Power Corporation incorporated with \$25,000 capital stock; S. G. Proffitt, president; C. W. Vest, vice-president; H. L. Lawson, treasurer; J. E. Proffitt, secretary.

Va., Lawrenceville.—City voted \$50,000 bond



Issue for electric-light plant, sewer system and water-works. Address The Mayor.

W. Va., Marlinton.—Marlinton Service Co. incorporated with \$30,000 capital stock by John Alexander and others. (See "Water-works.")

W. Va., Weston.—People's Electric Light, Ice & Water Power Co. incorporated with \$100,000 capital stock by M. S. Holt, J. M. Foster and others. (See "Ice and Cold-storage Plants.")

### FERTILIZER FACTORIES

Ga., Dublin.—Oconee Guano Co. incorporated with \$12,500 capital stock by Izzie Bashinski, J. D. Prince, J. L. Roberson, C. E. La Frange and others; will acquire Dublin Fertilizer Works.

Ga., Macon.—Interstate Chemical Co., W. B. Chisholm, general manager, Charleston, S. C., purchased nearly 17 acres land at \$15,000 as site for plant; will erect two buildings for fertilizer and two for acid departments, office building and warehouse; also construct extensive railway yards. (Previously mentioned.)

### FLOUR, FEED AND MEAL MILLS

Miss., Greenville.—W. A. Everman, C. P. William, Charles Hafter, R. G. Haxton and others are interested in organization of company with \$20,000 capital stock to establish grist mill and elevator; cost of plant about \$10,000.

### FOUNDRY AND MACHINE PLANTS

Md., Baltimore.—Bridge Works.—Carnegie Steel Co., Pittsburgh, Pa., purchased Baltimore Bridge Company plant at about \$400,000; will continue operations and build large warehouse for steel structural materials.

Mo., Kansas City.—Machinery.—Miller-Sandy Machinery Co., 1621 Main St. (recently noted incorporated with \$10,000 capital stock), is jobber of boilers, radiators, electrical machinery, mill and machinery supplies, etc.

Mo., St. Louis.—Diesel Engines.—Busch-Sulzer Bros.-Diesel Engine Co., general offices in South Side Bank Bldg., purchased 8½ acres land at about \$173,000 as site for Diesel engine works; will expend about \$10,000 to prepare site for buildings; latter will include office, power-house, several machine shops, main and smaller foundries, blacksmith and testing shops, etc.; plant planned for future doubling of capacity; initial expenditure for buildings and machinery about \$500,000. (Previously mentioned.)

Tex., Fort Worth.—Pumps.—Crescent Pump Works incorporated with \$10,000 capital stock by R. Vickery, W. W. Manning, G. E. Crass and others; will establish works; proposes to manufacture 15 to 20 pumps per month.

Va., Richmond.—Locomotives.—American Locomotive Co., James McNaughton, vice-president, 30 Church St., New York, is considering enlarging plant; present capacity 40 locomotives per month.

### GAS AND OIL DEVELOPMENTS

La., Lake Charles.—Eagle Petroleum Co. incorporated with \$15,000 capital stock; W. W. Bell, president; Charles O. Noble, vice-president; Erastus Hill, secretary-treasurer.

La., Vivian.—Hub Oil Co. No. 1, Ltd., Vivian Bank Bldg., will open bids about April 1 for drilling, pumping machinery, etc.; proposals for piping, etc., now open; one mile six-inch pipe line; P. M. Williams in charge; capital stock \$30,000. (Recently noted. See "Machinery Wanted.")

Miss., Pachuta.—Statewide Mississippi Oil & Mineral Co. organized with Charles R. Lee (United States Attorney), president; John A. Webb (chairman Railroad Commission), secretary-treasurer, and Charles D. Hill, vice-president and manager, all probably of Jackson, Miss.

Okla., Muskogee.—Lost Lease Oil Co. incorporated with \$2500 capital stock by Franklin Garland, A. T. Woods and Katharine Braden.

Okla., Altus.—Oklahoma-Union Oil & Development Co. incorporated with \$20,000 capital stock by J. E. Fowler and R. L. James, Altus, Okla.; C. B. Boverie, Wellington, Tex., and W. M. Brock, Hollis.

Okla., Davis.—New Mid-Continent Oil Co. incorporated with \$200,000 capital stock by C. B. Vaughan, C. B. Ramsey and E. A. Hill.

Okla., Manitou.—Manitou Oil & Development Co. incorporated with \$10,000 capital stock by G. B. Williams, F. A. Mather, Jay Collis and M. Barnes.

Tenn., Nashville.—Cassety Oil Co. incorporated with \$5000 capital stock by W. M. Cassety, W. M. Cassety, Jr., James Cassety, H. H. Campbell and Duncan McKay.

Tex., Concho.—T. L. Moran of New York,

representing New York syndicate, is negotiating with E. C. McNeal of Concho Land Co. for lease of 300,000 acres of gas and oil lands.

Tex., Wichita Falls.—Avis Oil & Gas Co. incorporated with \$15,000 capital stock by J. D. Avis, F. P. St. Clair and L. Solinsky.

W. Va., Buckhannon.—Brown Oil & Gas Co. incorporated with \$16,000 capital stock by J. M. King, Eugene Brown, K. H. Trippett, H. O. Talbott and I. R. Hall.

W. Va., Buckhannon.—Nocturnal Gas Co. incorporated with \$8000 capital stock by Charles P. Lynch, H. E. Young, J. H. McCray and others.

W. Va., Buckhannon.—Hard Luck Gas Co. incorporated with \$8000 capital stock by L. H. Trippett, J. M. King, Eugene Brown, I. R. Hall and W. T. Stockert.

W. Va., Buckhannon.—Cunningham Oil & Gas Co. incorporated with \$8000 capital stock by J. M. King, Eugene Brown, William Post, C. D. Munson and L. H. Trippett.

W. Va., Parkersburg.—R. J. R. S. Oil & Gas Co. incorporated with \$5000 capital stock by S. B. Stiles, R. G. Stiles and F. H. Rexroad of Parkersburg; R. F. Recse, Eatons, W. Va., and W. H. Jonas, Petroleum, W. Va.

### ICE AND COLD-STORAGE PLANTS

Ala., Birmingham.—Imperial Brewing Co., J. F. Donahoe, president, Woodward Bldg., will install cold-storage plant in connection with ice plant and brewery recently mentioned; ice plant will have capacity of 250

N. C., Spencer.—W. C. Hines of Rocky Mount and Wilmington, N. C., is organizing company to erect ice plant.

Okla., Hugo.—Hugo Ice & Light Co. will enlarge ice plant; increase capacity from 15 to 45 tons daily.

Tenn., Knoxville.—East Tennessee Brewing Co. will install 250-ton ice plant and increase daily capacity to about 150 tons; plans provide for ice storage-room of from 3500 to 5000 tons.

Tenn., Mt. Pleasant.—Mt. Pleasant Ice Co. (recently noted organized with \$10,000 capital stock) has elected J. E. Anderson, president; J. T. Anderson, secretary; will remodel building and install 15-ton ice machine; now open to receive bids. (See "Machinery Wanted.")

Tex., Beeville.—Beeville Manufacturing Co. will install 20-ton ice plant. (See "Electric Light Plants" and "Machinery Wanted.")

Tex., Brownsville.—Consumers' Ice & Cold Storage Co. organized with \$25,000 capital stock by V. I. Crizell, Teofilo Crizell, E. L. Burke and L. B. Prunte to establish ice and cold-storage plant; erect brick building, 80x120 feet; D. McClendon will be in charge of construction and manager of plant.

Tex., Orange.—G. E. Holland is interested in organization of company to establish cold storage plant.

Va., Berryville.—Berryville Ice & Refrigerating Co. will enlarge cold-storage warehouse for apples, increasing capacity from 5000 to 12,000 barrels.

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tons daily and brewery 100 barrels annually; estimated cost of combined plants, \$750,000.

Ark., Argenta.—J. W. Lippincott, Little Rock, Ark., will erect cold-storage warehouse and ice factory; cost about \$100,000.

Ark., Harvard.—Railway's Ice Co., M. T. McGraw, secretary, will erect 65-ton ice factory.

Ark., Little Rock.—Watson-Aven Co. will install refrigerating plant. (See "Miscellaneous Factories.")

Fla., Bradentown.—Excelsior Ice Co., H. W. Lind, manager, Manatee, Fla., awarded contract for erection of buildings for ice plant; machinery to be removed from Manatee.

Fla., Jacksonville.—Jacksonville Ice Co. incorporated with \$25,000 capital stock; L. J. Nathan, president; P. J. Nathan, vice-president; R. S. Monck, secretary-treasurer.

Ga., Atlanta.—Benjamin-Osburn Co. contemplates installing refrigerating and ice plant; daily capacity, 10 tons.

Ga., Atlanta.—Wiley's contemplates installing cold-storage system in connection with candy factory. (See "Miscellaneous Factories.")

Ga., Atlanta.—Southern Ice Co., J. H. Howe, president, Nashville, Tenn., purchased Independent Ice Co.'s plant, East Atlanta Ice Co.'s plant for \$100,000, and Atlanta Oil & Fertilizer Co.'s ice plant for \$150,000. (Further facts lately mentioned under Tenn., Nashville.)

Ky., Louisville.—Big Sandy Milling Co. contemplates erecting ice factory.

Ky., Sturgis.—Walter J. Kern will install 10-ton ice plant, for which contract has been awarded.

Va., Chincoteague Island.—Chincoteague Ice & Water Co. incorporated with \$10,000 capital stock; R. L. Marshall, president; J. J. Baker, secretary; D. J. Wheaton, manager.

Va., Harrisonburg.—Harrisonburg Ice Corporation will enlarge cold-storage warehouse, increasing capacity from 2500 to 6000 barrels.

Va., Richmond.—Floyd Tyler & Bro. are having plans prepared by Albert F. Hunt of Richmond for plate-ice plant.

Va., Richmond.—Julian W. and Floyd Tyler will erect additional ice plant; capacity 50 tons plate ice daily; artesian well is being bored; plant cost about \$60,000.

W. Va., Marlinton.—Marlinton Service Co. incorporated with \$30,000 capital stock by John Alexander and others. (See "Water-works.")

W. Va., Weston.—People's Electric Light, Ice & Water Power Co. incorporated with \$100,000 capital stock by M. S. Holt, J. M. Foster, George A. Hatzel, Charles M. Snaith, Ross L. King and others; manufacture ice, operate cold-storage plant, supply electricity, etc.

### IRON AND STEEL PLANTS

Ala., Attalla.—Iron Furnace.—Eagle Iron Co., Chattanooga, Tenn., will reline iron furnace.

Ala., Sheffield.—Iron Furnace.—Sloss-Sheffield Steel & Iron Co., Woodward Bldg., Birmingham, Ala., will reline and repair Hattie Ensey furnace.

### LAND DEVELOPMENTS

Ala., Birmingham.—Forney Johnston and J. P. Lees, care of Alabama Coal Operators' Association, Brown-Marx Bldg., have ac-

quired tract of land and will improve for negro cemetery.

Ala., Birmingham.—S. E. Brown Land Co. incorporated with \$10,000 capital stock; S. E. Brown, president; Vernon Brown, vice-president; D. E. Brown, secretary-treasurer.

Ala., Birmingham.—Empire Land Co. incorporated by W. W. Atkins, T. A. Rideout and W. R. Rideout.

Ark., Little Rock.—Southland Orchard & Vineyard Co. purchased 6000 acres in Perry county; will plant 1000-acre orchard in spring and later plant remainder of tract.

D. C., Washington.—Ingleside Company incorporated with \$100,000 capital stock by Salvatore L. Slati, S. N. Rosenthal and J. W. Willson.

Fla., Dade City.—Tampa Bay Land Co. incorporated with \$60,000 capital stock; will develop 10,000 acres of land for farming; divide into 40-acre tracts and sell; each quarter section of 160 acres to be surrounded by 40 foot street; cost of opening and grading streets, \$5000; James F. Taylor, manager; company's main office, Tampa, Fla. (Recently noted.)

Fla., Pensacola.—Stillman Land Co. incorporated with \$25,000 capital stock; John E. Stillman, president; H. H. Boyer, vice-president; Henry M. Yonge, secretary-treasurer.

Fla., Pensacola.—Henry Hollman and W. M. Cram, Berlin, Ontario, purchased 14,000 acres cut-over timber land and proposes to colonize with German farmers.

Fla., Tautle.—Florida East Coast Railway, J. H. Nelson, general superintendent, St. Augustine, Fla., organized company to develop towns on new Kissimmee Valley division; first to be developed will be Okeechee (now known as Tautle), where it has selected site of 10,000 acres, which will be surveyed under supervision of P. F. Jenkins, engineer.

Ga., Atlanta.—Edward L. Winn, G. A. Martin and W. H. Martin purchased 11 acres having frontage of 1267 feet on Spring St. and depth of 332 feet; will divide into building lots, each with frontage of 50 feet, lay sewers, water mains and sidewalks, etc.

La., Opelousas.—T. H. Lewis, J. A. Haas, J. P. Salvan and others organized Mount Hope Plantation & Land Co. and acquired Mount Hope timber tract near Opelousas; after timber is removed will develop land by colonization.

Mo., St. Louis.—Crystal Lake Park Co. incorporated with \$50,000 capital stock by John Grueninger, Jr., Fred L. Kerth, Richard H. Stevens, Sr., Richard H. Stevens, Jr., and Henry P. Kerth; reported to have acquired 60 acres of wooded land to make improvements, including construction of lake to be stocked with fish; Mr. Grueninger, Jr., is president.

N. C., Concord.—Joseph F. Cannon purchased property comprising 15 building lots and 18 dwellings; will improve and further develop.

S. C., Charleston.—Mount Holley Development Co. incorporated with \$250,000 capital stock; R. L. Montague, president; E. W. Duram, Jr., secretary-treasurer.

S. C., Laurens.—Southern Land Development Co. incorporated with \$30,000 capital stock; N. B. Dial, president; J. T. Johnston, vice-president; E. P. Minter, secretary-treasurer.

S. C., Saluda.—Saluda Development Co. incorporated with \$6000 capital stock by Eugene W. Able and Willie N. Padgett.

Tex., Houston.—Southern Texas Farm Land Co. incorporated with \$2500 capital stock by W. B. Renn, H. A. Morris and D. Atchison.

Tex., Houston.—Bay Shore Homesite Co. owns 663 acres of land having frontage of 4000 feet on Trinity Bay, 25 feet above tide-water; will develop as winter residence resort; Thomas A. Scott, president; Monta J. Moore, vice-president; John D. Larkin, secretary-treasurer. (Recently reported incorporated with \$65,000 capital stock.)

### LUMBER MANUFACTURING

Ala., Birmingham.—Watters-Tonge Lumber Co. incorporated with \$30,000 capital stock by Harry Watters, Lapsley Watters and G. T. Tonge.

Ala., Mobile.—C. E. Stewart, Atlanta, Ga., purchased 4000 acres of timber land on Alabama River, near Mobile, estimated to contain 10,000,000 feet hardwood timber; purchase price, \$25,000; will organize company and develop this property and 1000 acres adjoining also owned; erect sawmill.

Ark., Helena.—A. Maas, Memphis, Tenn., purchased 30,000 acres Desha and Phillips county timber land at about \$400,000; will



develop; build tramway to connect with Iron Mountain Route.

Fla., Fort Myers.—E. C. Jordan Company will erect sawmill at Idella.

Fla., Sorrento.—Battle Lumber Co. (F. E. and G. C. Battle) purchased from J. Williams & Co. land and timber rights, comprising 15,000 acres, in Lake and Orange counties; will build sawmill.

Ga., Newton.—E. J. Willingham, Macon, Ga., states he and B. P. O'Neal purchased tract of timber land in South Georgia, but do not contemplate operation of mill at present. (Recently noted.)

Miss., Gulfport.—H. O. Thompson & Co. incorporated with \$5000 capital stock by H. O. Thompson of Gulfport; R. J. Williams, Bay St. Louis, Miss., and W. A. Powell, Mobile, Ala.

Miss., Purvis.—James T. Hand, representing Hand & Jordan of Hattiesburg and Hub, Miss., acquired 7000 acres timber land five miles from Purvis; will erect drykiln and mill to have capacity of 25,000 feet daily; estimated timber will cut 80,000,000 feet of lumber.

Miss., Robinwood.—Robinson Bros. Lumber Co. incorporated with \$10,000 capital stock; C. W. Robinson, president; Robert G. Robinson, secretary; J. H. Anderson, manager; plant nearing completion; daily capacity 60,000 feet hardwood lumber and 15,000 feet of wagon and furniture dimension stock.

Okla., Cherokee.—Alfalfa County Lumber Co. incorporated with \$10,000 capital stock by F. M. Burroughs of Cherokee and L. A. Heckard and J. W. Metz of Wichita, Kans.

S. C., Grays Hill.—N. M. Polk of Hampton county, South Carolina, purchased land near Grays Hill from R. H. Long of Beaufort, S. C., and will cut timber; daily capacity 10,000 to 15,000 feet short yellow pine; will turpentine timber before cutting; has 40-horsepower mill.

S. C., Walterboro.—Coleman-Long Company incorporated with \$4000 capital stock; D. E. Sheppard, president; J. C. Coleman, vice-president; James E. Penrify, secretary-treasurer.

Tenn., Memphis.—Blanton-Wyatt Lumber Co. incorporated with \$30,000 capital stock by J. W. Wyatt, K. Blanton, R. J. Carter, W. T. McLain and J. L. McRee.

Tenn., Morristown.—T. J. Cantwell of Hancock county, Tennessee, purchased from J. A. Magee, Mooresburg, Tenn., 800 acres of timber land for \$30,000, and will develop; will install several sawmills.

Tenn., Nashville.—Woodcliff Lumber Co. incorporated with \$50,000 capital stock by J. Gibson McIlvain, Hugh McIlvain, Walter B. McIlvain, J. Gibson McIlvain, Jr., and C. T. Dew.

Tenn., Sevier County.—Miller Lumber Co., J. Marton Miller, president, Knoxville, Tenn., purchased 500 acres timber land and will build sawmill for development.

Tenn., Burns.—A. B. Luther will erect planing mill.

Tex., Dallas.—Western Lumber & Creosoting Co., 227 Linz Bldg., will open bids February 1 to erect creosoting plant, retorts, tanks, iron sheds, etc.; fireproof construction; cost \$50,000; machinery includes tanks, boilers, block machine, planer, etc.; J. J. Marshall, president and treasurer; R. W. Yarbrough, vice-president; L. M. Washburn, secretary. (Recently noted incorporated with \$50,000 capital stock.)

Tex., Fort Worth.—West Side Lumber Co. incorporated with \$10,000 capital stock by I. A. Dye, J. D. Cowley and W. H. Amis.

Tex., Lexington.—Lee County Lumber Co. changed name to Lexington Supply Co. and increased capital stock from \$15,000 to \$30,000.

Va., Wise.—Miller & Fulton will, it is reported, erect band sawmill.

### METAL-WORKING PLANTS

Mo., St. Louis.—Nalls.—St. Louis Nail & Supply Co. incorporated with \$50,000 capital stock by B. S. Manrz, L. H. Gunther and John R. Turner, all of 15 Exchange Pl., Jersey City, N. J.

### MINING

Ga., Chatsworth.—Talcum, etc.—Fort Mountain Talc Co. of Georgia, Clark H. Abbott, manager, R. F. D. No. 1, Box 43, will develop 400 acres of mining property; daily capacity, 30 tons of talc and 100 gross crayons; will install 30-horsepower water-wheel, small pulverizer and set of saws; main office, 29 Broadway, New York. (See "Machinery Wanted.")

Mo., Sarcosie.—Lead and Zinc.—Lone Pilgrim Mining Co. acquired 30 acres of land for about \$15,000 and will probably develop.

Okla., Miami.—Dollar Mining Co. elected T. J. Embree, president; W. W. Barrington,

vice-president; W. A. Munson, Jr., secretary, all of Okmulgee, Okla.; will develop five acres. (Recently noted incorporated under Okmulgee.)

Tenn., Concord.—Marble.—Tennessee Producers' Marble Co. leased marble lands and will develop.

Tenn., Wales.—Phosphate.—International Agricultural Corporation, 165 Broadway, New York, is reported as to build large plant for phosphate mining, and, writing to the Manufacturers Record regarding this report, states: "We have not formulated our plans for the development at Wales."

### MISCELLANEOUS CONSTRUCTION

Ark., Argenta.—Subway.—St. Louis, Iron Mountain & Southern Railway Co.'s subway (recently noted) will take place of present grade crossing; will consist of two reinforced concrete abutments under three tracks; three reinforced concrete pedestals; on these foundations will be placed three bents of timber under three tracks and standard trestle bridges of four spans; total length 60 feet; about 4000 cubic yards of excavation and several hundred yards of drain; work by company's force; no contracts.

Fla., Miami.—Lock.—Trustees Internal Improvement Fund of Florida, State Capitol, Tallahassee, Fla., will receive bids until February 1 for construction of concrete lock in Miami Drainage Canal; J. O. Wright, chief drainage engineer, Tallahassee, Fla. (See "Machinery Wanted.")

Fla., Pensacola.—Marine Railway and Dock. Warren Fish Co. awarded contract to H. I. Crandall & Co., East Boston, Mass., to construct marine railway and dock; 300 tons capacity; operated by electric power; cost of machinery, \$10,000; cost of dredging and grading, \$1000. (Recently noted.)

Fla., Tallahassee.—Concrete Lock.—Internal Improvement Fund, J. C. Lumling, secretary, will construct concrete lock in Miami Drainage Canal, about four miles from Miami; J. O. Wright, chief drainage engineer; bids received until February 1. (See "Machinery Wanted.")

Ga., Macon.—Piers, Wharves, etc.—Macon & Atlanta Construction Co. chartered with \$125,000 capital stock by Wm. Tusch, 103 Orange Ave., Cranford, N. J.; Harry N. Davis, 321 High St., Newark, N. J.; Paul A. Shipman, 2110 82d St., Brooklyn, N. Y.

La., New Orleans.—Pile Bulkhead.—Levee Commissioners, Jules C. Koenig, president, 201 New Orleans Court Bldg., receive bids until January 18 to construct pile bulkhead on east bank of Mississippi River between St. Maurice Ave. and St. Bernard parish line; 150 feet long. (See "Machinery Wanted.")

La., Pointe-a-la-Hache.—Canal.—Frank C. Myers will construct canal.

Md., Baltimore.—Park Board authorized construction of artificial swimming pool at Gwynn's Falls Park; cost \$3600; William S. Manning, park superintendent.

Mo., Lupas.—Revetment.—Missouri Pacific Railway awarded contract to De Witt & Shobe, Glasgow, Mo., for 2000 linear feet revetment on Missouri River.

Mo., St. Louis.—Lake.—Crystal Lake Park Co., John Grueninger, Jr., president, incorporated with \$30,000 capital stock; reported to have acquired 60 acres of wooded land on Denny Rd. and to make improvements, including construction of lake. (See "Land Developments.")

S. C., Charleston.—Wharf.—H. W. Crouch secured permit to improve Accommodation Wharf; widen wharf 30 feet and erect shed 305x78 feet; cost about \$7000.

Tex., Beaumont.—Canal.—Bowers Southern Dredging Co., Galveston, Tex., is lowest bidder at about \$533,000 for dredging Sabine-Neches deep-water canal.

Tex., Galveston.—Levee.—Charles Clarke & Co. of Galveston are lowest bidders at about \$21,000 for repairing northeast jetty at mouth of Brazos River; Major Earl I. Brown, engineer in charge of district. (Call for bids lately noted.)

### MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Bottlers' Supplies.—Southern Supply & Agency Co. incorporated with \$10,000 capital stock; Maurice K. Erdreich, president; Joseph Joseph, vice-president; J. L. Gerson, secretary; Harry Kahn, treasurer.

Ala., Florence.—Steamboat Line.—Florence & Rogersville Packet Co. incorporated with \$5000 capital stock to operate steamboat on Tennessee River between Florence and Lamb's Ferry; William Richardson, president; C. W. Ashcraft, vice-president; W. M. Darby, secretary; A. E. Jackson, treasurer.

D. C., Washington.—Contracting.—W. C. Jones Contracting Co. incorporated with \$50,000 capital stock by Wilbur C. Jones and J. Carl Darnall (both of Darnall & Jones), 720 13th St. N. W., and Joseph J. Devlue.

Fla., Arch Creek.—Fruit.—Arch Creek Fruit Co. incorporated with \$30,000 capital stock by F. M. Blystone, G. A. Goff and Fred C. Miller.

Ga., Macon.—Engineering and Contracting. Southern Engineering & Contracting Co., 305 American National Bank Bldg., incorporated with \$30,000 capital stock; C. M. Preston, president; W. C. Redding, vice-president, secretary and treasurer; Maitland Solomon, manager and chief engineer; succeeds W. C. Redding Company; will contract for street-paving, road building, lighting plants, sewer systems, etc. (See "Machinery Wanted.")

Ky., Frankfort.—Hardware.—Hardie Hardware Co. incorporated with \$7000 capital stock by Susan Hardie, Julia Vaughn and McKee Hardie.

Ky., Jett.—Stock Farm.—Weehawken Stock Farm Co. incorporated with \$25,000 capital stock by Charles E. Hoge, Percy Hoge, French Hoge, A. G. Jeffers and J. W. Jeffers.

Ky., Middlesboro.—Transfer.—19th Street Livery & Transfer Co. incorporated with \$4000 capital stock by F. M. Gordon, James D. Yarbrough and Eunice Yarbrough.

La., New Orleans.—Well Drilling.—New Orleans Well Drilling Co. incorporated with \$5000 capital stock; A. M. Lockett, president; C. L. Brown, vice-president; John J. Higgins, Jr., secretary-treasurer.

La., New Orleans.—Publishing.—Workers' Publishing Co. incorporated with \$10,000 capital stock; John N. Breen, president; E. Langgenhening, vice-president; T. J. O'Hara, secretary; W. J. Croft, treasurer.

Md., Baltimore.—Machinery.—Fisherman Machinery Co. incorporated by Edwin D. Loane, Jr. (306 S. Hanover St.), John Hiltz (3 Clay St.) and Joseph Townsend England.

Md., Baltimore.—Towing.—Locust Point Towing Co. incorporated with \$4000 capital stock by Henry G. Hilken and Paul G. L. Hilken (both of 5-7 S. Gay St.), George F. Dederer, Philip Volz and others.

Miss., Gulfport.—Publishing.—Daily Herald Publishing Co. incorporated with \$25,000 capital stock by George W. Wilkes, Eugene P. Wilkes and others.

Miss., Gulfport.—Lumber Exporting, etc.—H. O. Thompson & Co. incorporated with \$5000 capital stock by H. O. Thompson of Gulfport, R. J. Williams of Bay St. Louis, Miss., and W. A. Powell of Mobile, Ala.

Mo., Hunter.—Cattle.—Southern Missouri Sheep & Cattle Co. incorporated with \$300,000 capital stock by W. W. G. Helm, D. D. Dutton, Charles M. Blackmar and others.

Mo., Joplin.—Stockyards.—O. M. Campbell, Kansas City, Mo., and associates will establish stockyards and packing plant; acquired 16-acre site; organized company with \$100,000 capital stock.

Mo., Kansas City.—Construction.—Mulholland Construction Co. incorporated with \$2000 capital stock by J. W. Mulholland, L. M. Mulholland and W. C. Culbertson.

Mo., St. Louis.—Laundry.—American Steam Laundry Co. incorporated with \$150,000 capital stock by Charles M. Polk, Thomas S. McPheeters, James A. Waechter and others.

N. C., Broadway.—Supplies.—Broadway Farmers' Supply Co. incorporated with \$100,000 capital stock by W. C. Hunt, W. M. Thomas and A. P. Thomas.

Okla., Ardmore.—Plumbing.—Hoffman Plumbing & Sheet Metal Co. incorporated with \$10,000 capital stock by John W. Hoffman, Thomas E. Wood and Wilson Newman.

Okla., Lindsay.—Hardware.—Wright Hardware Co. incorporated with \$10,000 capital stock by O. W. Wright, E. L. Wright and W. O. Norvill.

Okla., Coalgate.—Publishing.—Coalgate Publishing Co. incorporated with \$10,000 capital stock by M. B. Hickman, O. M. Stevens, J. I. Murray and A. T. West.

Okla., El Reno.—Construction.—Fox Construction Co. incorporated with \$25,000 capital stock by John W. Fox, W. C. Armstrong and A. W. Lippe.

Okla., Granite.—Elevator.—T. O. Bridget, Joplin, Mo., will construct elevator and crusher.

Okla., Madill.—Hardware.—Vittitoe-Rabon-Ross Hardware Co. incorporated with \$25,000 capital stock by Sam Vittitoe, R. A. Rabon, W. T. Ross and James X. Ross.

Okla., Oklahoma City.—Transfer.—O K Bus & Baggage Co. incorporated with \$25,000 capital stock by E. B. Cockrel, H. P. Croff and F. A. Vickrey.

Okla., Sayre.—Publishing.—Social Democrat Publishing Co. incorporated by D. E. Hedg-

peth, Sayre; J. H. Harper, Erick, Okla., and Frank Winters, Elk City, Okla.

S. C., Aiken.—Publishing.—Sentinel Company incorporated with \$1000 capital stock; W. E. Duncan, president and treasurer; C. W. Busch, secretary.

Tenn., Kingston.—Wood Preserving.—Railway Wood Preserving Co. incorporated with \$10,000 capital stock by Hall Hagemeyer, Claude E. Hendrick, W. C. Anderson, L. O. Scott and E. B. Gribble.

Tenn., Knoxville.—Construction.—Leighton-Ambrose Construction Co. incorporated with \$25,000 capital stock by A. A. Schmid, W. L. Ambrose, J. Gerald Stuart and others.

Tenn., Nashville.—Railroad Contracting.—Walton-McDowell Company incorporated with \$50,000 capital stock by Samuel Walton, E. V. Rawn, J. R. McDowell, J. E. Rodes and M. P. Estes; has contract to grade 12-mile section south of Brentwood, Tenn., on Lewisburg & Northern Railroad.

Tex., Blooming Grove.—Hardware.—Haden-Smith Hardware Co. incorporated with \$12,500 capital stock by C. A. Haden, R. S. Loyd, N. A. Smith and others.

Tex., Corpus Christi.—Hardware.—Gulf Coast Hardware Co. incorporated with \$8000 capital stock by J. K. Hipp, R. L. Hipp and E. A. Bagnall.

Tex., Dallas.—Creosoting Plant.—Western Lumber & Creosoting Co., R. W. Yarbrough, president, 227 Linz Bldg., will open bids February 1 to erect creosoting plant, etc. (See "Lumber Manufacturing Plants.")

Tex., Ennis.—Hardware.—Blakey-Clark Hardware Co. incorporated with \$50,000 capital stock by J. Blakey, T. T. Clark, J. D. King and others.

Tex., Houston.—Publishing.—State Topics Co. incorporated with \$5000 capital stock by W. R. Sinclair, R. E. Sinclair and B. Sinclair.

Tex., Houston.—Ranch.—Fort Terrell Ranch Co. incorporated with \$100,000 capital stock by J. M. West, J. T. Evans and C. E. Granbury.

Tex., San Marcos.—Printing.—San Marcos Printing Co. incorporated with \$3000 capital stock by B. R. Lankenship, G. C. Staples and Thomas G. Oliver.

Tex., Sinton.—Hardware and Furniture.—Star Hardware & Furniture Co. incorporated with \$10,000 capital stock by R. Parker, C. E. McWhorter and J. R. McCuffin.

Va., Columbia.—Laundry.—Columbia Laundry Co. increased capital stock from \$20,000 to \$50,000.

Va., Charlottesville.—Hardware.—W. T. Martin Hardware Co. incorporated with \$50,000 capital stock; W. T. Martin, president; C. W. Graves, secretary; W. T. Martin, treasurer.

Va., Lynchburg.—Dry Cleaning and Dyeing. Crutchfield Dry Cleaning & Dye Works organized with \$15,000 capital stock; E. H. Crutchfield, president; Leon Goodman, vice-president; T. J. Powell, secretary-treasurer.

W. Va., Beckley.—Publishing.—Raleigh Register incorporated with \$20,000 capital stock by George W. Williams, M. J. Meadows, W. W. Hume, E. E. Tucker and C. C. Tucker.

### MISCELLANEOUS FACTORIES

Ala., Cullman.—Morgan County Ala-Cola Co. incorporated with \$15,000 capital stock; H. M. Vanderputte, president; F. J. Schick, first vice-president and general manager; C. F. Bell, second vice-president, Birmingham, Ala.; J. H. Kramer, secretary-treasurer.

Ala., Montgomery.—Candy.—Ducros Candy Co. contemplates installing additional machinery; present daily capacity 75 to 100 pounds of candy; Robert Ducros, president and treasurer; L. F. Sweatt, vice-president and manager. (Recently reported incorporated with \$3000 capital stock.)

Ala., Talladega.—Paints.—Queneda Graphite Co. incorporated with \$75,000 capital stock by Eldridge P. Wilbur and others.

Ark., Little Rock.—Watson-Aven Company is having plans prepared by Tait-Nordmeyer Engineering Co. for ice-cream factory to be equipped with refrigerating plant.

Fla., Daytona.—Schantz Electric, Ice & Water Co. petitioned for franchise to construct gas plant.

Fla., Molino.—Turpentine, etc.—Florida Pine Products Co. incorporated with \$5000 capital stock; W. P. Brownson, president; John Baumeister, secretary-treasurer; P. B. Lawrence, superintendent.

Fla., Kissimmee.—Aeroplanes.—Patton Aeroplane Co. incorporated with \$60,000 capital stock to manufacture patented aeroplane; Moses P. Patton, president, Hollins, Ala.; John L. Tyler, vice-president, and Hugo F. Biedermann, secretary-treasurer, both of Birmingham, Ala.



Fla., Pinellas Farms (postoffice, St. Petersburg, Fla.)—Sugar.—Florida Association, 1915 Arch and 1914 Cherry Sts., Philadelphia, Pa., contemplates establishment of mill to manufacture sugar-cane grown at Pinellas Farms. (See "Machinery Wanted.")

Ga., Athens—Lime and Macadam.—Athens Lime & Macadam Co. incorporated with \$10,000 capital stock by A. W. Prather, J. B. McConkey, D. S. Myers and others.

Ga., Atlanta—Candy.—Wiley's contemplate erecting plant; will install cold-storage system. (See "Machinery Wanted.")

Ga., Atlanta—Food Products.—J. B. Chesney, 1116 Fourth National Bank Bldg., is promoting organization of Rice Products Co. to manufacture foods made from rice, rice combinations, fruit, etc.

Ga., Atlanta—Medicine.—Raney Medicine Co., Rebecca, Ga., will establish medicine plant.

Ky., Maysville — Tobacco. — Independent Loose Leaf Tobacco Co. incorporated with \$30,000 capital stock by W. W. Ball, Ben Longnecker, W. W. Ball, Jr., and George Longnecker.

Ga., Rome—Washing Machines.—National Home Laundry (not National Domestic Laundry Co., as recently stated) will be organized in about 90 days by E. A. Heard, Jr., and others to manufacture washing machines patented by William A. Cook.

Ky., Frankfort—Gas.—T. Lindsey Fitch, Louisville, Ky., is promoting organization of company to consolidate gas and electric-light companies in Kentucky; acquired (for \$750,000) Capitol Gas & Electric Co. of Frankfort, Bowling Green Gas & Light Co. of Bowling Green, City Light Co. of Hopkinsville and Owensboro Gas Light Co. of Owensboro; contemplates improvements. (See "Electric Plants.")

Ky., Henderson—Nicotine.—American Nicotine Co. incorporated with \$200,000 capital stock by C. F. Gloystein, Thomas Hodge and H. H. Behnken.

Ky., Lexington—Brooms.—Lexington Broom Works incorporated with \$10,000 capital stock by J. H. Letton, Laura Anderson and D. H. Anderson.

Ky., Maysville—Pulleys.—Ohio Valley Pulley Works incorporated with \$50,000 capital stock by E. P. Browning, S. P. Browning and Leighton Browning.

Ky., Newport—Soap.—M. B. Kendrick Company incorporated by M. B. Kendrick, Samuel Krutzman, Harrison Pierce and Carrie Kendrick.

La., Alton—Turpentine.—Hurley & Haas, Waveland, Mass., purchased turpentine plant of S. T. Cox; will improve and operate.

La., New Orleans—Films.—Feature Film Co. incorporated with \$20,000 capital stock; David Wolf, president and general manager; Thomas Walsh, vice-president; William Guerlinger, secretary-treasurer.

La., Shreveport—Glass Works.—Henry Wagner, Indianapolis, Ind., will, it is reported, establish plant to manufacture glass bottles, lamp chimneys, fruit jars, etc.

Md., Baltimore—Candy.—Jones-Rossiter Company incorporated with \$50,000 capital stock by J. Fred Rossiter (3714 Pimlico Blvd.), Robert W. Beach (407 Union Trust Bldg.) and others.

Md., Baltimore—Clothing.—L. Greif & Bro., Etaw and German Sts., awarded contract to Monmonier & Sorrell, 1711 McCulloh St., Baltimore, at \$50,000 to erect factory at Eager Pl. and Milton Ave.; steel frame; brick and stone; fireproof; four stories; 75x155 feet; electric elevators; refrigerating and power plants; sprinkler system; plans by Frank & Kavanaugh, 328 N. Charles St., Baltimore. (Previously mentioned.)

Miss., Hattiesburg—Turpentine.—Chester Fairly secured leases on timber properties and will develop for turpentine.

Miss., Leakesville—Turpentine and Naval Stores.—L. D. Clarke & Co. incorporated with \$25,000 capital stock by L. D. Clarke, Nat Owen and J. W. Rackstrom.

Mo., Kansas City—Cigars.—Oberholts & Poinsett Cigar Co. incorporated with \$35,000 capital stock by E. C. Oberholts, W. B. Poinsett, M. E. Cavanaugh and William W. Brady.

Mo., St. Louis—Building Supplies.—St. Louis Supply & Equipment Co. incorporated with \$2000 capital stock by James J. Gallagher, Oliver J. Grace and Daniel F. Meehan.

Mo., St. Louis—Plaster Board.—Hercules Plaster Board Co., executive offices, 1011 Chestnut St., Philadelphia, Pa., is considering construction of plant at St. Louis. (See Va., Hampton.)

N. C., Southmont—Building Material.—C. M. and G. W. Wall, Wallburg, N. C., will establish building material plant; machine room 80x100 feet.

Okla., Blackwell—Remedies.—Raisdall Remedy Co. incorporated with \$10,000 capital stock by W. E. Tredway, Lula V. Tredway and Maye Vincent.

Okla., Oklahoma City—Corn Poppers.—Lightner Automatic Corn Popper Co. incorporated with \$10,000 capital stock by Frank W. Wadwell and E. E. Parnell of Oklahoma City, R. H. Slipes of Guthrie, Okla., and C. A. Lightner of Olustee, Okla.

S. C., Grays Hill—Turpentine.—N. M. Polk of Hampton county, South Carolina, purchased land near Grays Hill from R. H. Long of Beaufort, S. C., and will develop; will establish turpentine plant and sawmill.

Tenn., Chattanooga—Suspenders.—Chattanooga Suspender Co. increased capital stock from \$15,000 to \$25,000.

Tenn., Mt. Pleasant—Bottling Plant, etc.—Mt. Pleasant Ice Co. (recently noted) organized with \$10,000 capital stock and to have acquired Mt. Pleasant Bottling Works will remodel building and install five-ton ice plant. (See "Ice and Cold-storage Plants.")

Tenn., Nashville—Pen Positioning Device.—Deleshaw Manufacturing Co. incorporated with \$50,000 capital stock by W. G. Deleshaw and L. M. Jackson.

Tenn., Nashville—Milk Products.—New Southern Milk Condensing Co. incorporated with \$25,000 capital stock by W. E. Drake, W. T. Drullard and A. Hilderbrand.

Tenn., Nashville—Sweeping Compounds.—Cassette Oil Co. incorporated with \$50,000 capital stock by W. M. Cassette, W. M. Cassette, Jr., James Cassette, H. H. Campbell and Duncan McKay to manufacture floor sweeping compounds.

Tex., El Paso—Implements and Vehicles.—Valley Implement & Vehicle Co. incorporated with \$40,000 capital stock by J. A. Smith, M. L. Cadwallader and A. G. Foster.

Tex., Fort Worth—Harness and Saddlery Factory and Tannery.—James-Mickey-Schow Co. (lately T. R. James & Sons) will enlarge plant so as to double capacity. (Recently stated as changing name and increasing capital stock from \$200,000 to \$400,000.)

Tex., Orange—Oil Plant.—Marmola Petroleum Co., Houston, Tex., awarded contract to C. A. Russell of Orange to erect building; proposes to erect two storage tanks, each having two apartments.

Tex., Palestine—Bottling Plant.—J. L. Meyer, proprietor of Crown Bottling Works, will erect brick and concrete building for bottling works; completion in about 30 days. (See "Machinery Wanted.")

Tex., Port Arthur—Gas.—City granted franchise to J. C. Connolly, Ardmore, Okla., for gas-manufacturing plant.

Va., Hampton—Plaster Board.—Hercules Plaster Board Co., executive offices 1011 Chestnut St., Philadelphia, Pa., elected Wm. M. Alberti, president; Guy A. Howard, vice-president and general manager; C. Monteith Gilpin, secretary-treasurer; takes over plant of Plaster Products Co. at Hampton; contemplates construction of four plants, each with maximum capacity of 10,000 boards daily; first to be located near Philadelphia; second at Norfolk, Va.; third in Southwestern State; fourth probably at Chicago or St. Louis. (Recently noted incorporated with \$300,000 capital stock.)

Va., Norfolk—Clothing.—Normans, Inc., chartered with \$75,000 capital stock to establish clothing factory; J. E. Norman, president; R. T. Richardson, vice-president; J. B. Carroll, secretary-treasurer.

Va., Norfolk—Plaster Board.—Hercules Plaster Board Co., executive offices 1011 Chestnut St., Philadelphia, Pa., contemplates construction of plant at Norfolk. (See Va., Hampton.)

Va., Norfolk—Gas.—Pintch Compressing Co., 2 Rector St., New York, petitioned for franchise to operate gas plant and to lay pipe line to new union depot.

Va., Richmond—Drug and Toilet Preparations.—Johnston Manufacturing Co. incorporated with \$20,000 capital stock; Coleman Johnston, president; R. H. Stoltz, secretary-treasurer.

Va., Roanoke—Glass.—Piedmont Glass Co. increased capital stock from \$100,000 to \$200,000.

W. Va., Moundsville—Glass.—Fostoria Glass Co. has plans by C. D. McCarty, Wheeling, W. Va., for two buildings; two-story 80x230-foot structure and four-story 100x100-foot building; mill construction; cost \$65,000; will soon open bids. (Recently noted to increase capital stock to \$1,000,000.)

W. Va., Parkersburg—Vitrolite.—The Vitrolite Company will install additional machinery.

W. Va., St. Albans—Bottling.—St. Albans Bottling Works incorporated with \$25,000 capital stock; C. A. Yerkle, president; Will M.

Wood, secretary; G. D. Bryan, treasurer and manager; manufacture soft drinks; plant equipped.

W. Va., Wheeling—Gas Lamps and Radiators.—Rector Gas Radiator Co., Pittsburgh, Pa., is considering establishment of plant to manufacture gas radiators and lamps; proposed to organize company with \$75,000 capital stock; E. R. B. Martin, Pittsburgh, Pa., and George Kurner of Wheeling are representing Rector company.

## MOTORS AND GARAGES

Ark., Argenta.—E. A. Ramsey awarded contract to erect garage on Maple St.; one story; brick; 50x100 feet.

Fla., St. Petersburg.—H. R. Binnie awarded contract to Allen & DuBois, St. Petersburg, to erect garage and office building. (See "Contract Awarded—Stores.")

La., Shreveport.—Thomas Crichton awarded contract to Tom Green, Shreveport, to erect garage at Spring and Fannin Sts. to be occupied by Wray-Dickinson Company; cost \$14,325.

Md., Baltimore.—J. S. Ditch & Co., North and Mt. Royal Aves., will make extensive alterations to buildings at above location and equip as salesroom for automobiles, etc. (Recently reported incorporated with \$20,000 capital stock.)

Md., Baltimore.—J. S. Ditch & Co., Mt. Royal and North Aves., organized with J. S. Ditch, president; J. Mallory Taylor, Jr., vice-president; D. B. Taylor, secretary-treasurer; will deal in automobiles, etc. (Recently noted incorporated with \$20,000 capital stock.)

Mo., St. Louis.—Missouri Auto Top & Supply Co. incorporated with \$2000 capital stock by Ben W. Dalzell, William Brennecke and Wilbur C. Schwartz; will deal in motor vehicles.

Mo., St. Louis.—American Motor Sales Co. incorporated with \$5000 capital stock by C. T. Strauss, F. B. Nulsen and C. W. Waughopall.

S. C., Columbia.—R. H. Nesbitt Auto Co. incorporated with \$10,000 capital stock by R. H. Nesbitt of Spartanburg and W. D. Nesbitt, Birmingham, Ala.

Tex., Dallas.—Clarence E. Linz will erect building on Commerce St. to be occupied by automobile establishment; two stories; steel truss; cost \$15,000.

Tex., Iatan.—Plaza Tractor Co. will be organized to manufacture tractors, motor trucks and express wagons. M. S. Palmer may be addressed. (See "Woodworking Plants.")

Tex., Sherman.—Jim Roberts will complete garage on South Travis St.; cost \$10,000.

## RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ark., Pine Bluff.—St. Louis Southwestern Railway, C. D. Pardon, chief engineer, Tyler, Tex., will rebuild boiler and machine shops recently burned at loss of about \$50,000.

N. C., Wilson.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., will, it is reported, erect shops for manufacture of flat and box cars and passenger coaches.

Tex., San Angelo.—E. Dickinson, vice-president and general manager Kansas City, Mexico & Orient Railway Co., Kansas City, Mo., states company does not at present contemplate constructing shops. (Recently noted.)

## ROAD AND STREET WORK

Ala., Brewton.—W. S. Kellar, State Highway Engineer, Montgomery, Ala., awarded contract to R. H. Wright, Evergreen, Ala., at \$9000 for construction of nine miles of State-aid road from Brewton to Pollard. (Recently noted.)

Ala., Cullman.—Cullman county will vote on \$350,000 bond issue for road construction. Address County Commissioners.

Ala., Hamilton.—Marion County Commissioners awarded contract to A. F. Bearden, Birmingham, Ala., at \$17,350 to construct road from Hamilton to Gula.

Ala., Mobile.—City awarded contract to F. J. Proudfoot of Mobile at \$83,295 for wood-block paving, and to Southern Asphalt & Construction Co., Birmingham, Ala., at \$7600 for asphalt paving on streets in tenth paving venture, including Spring Hill Ave. from Broad to Ann St.; Wright Smith, City Engineer. (Recently mentioned.)

Ala., Selma.—City will construct 1000 square yards vitrified brick, 2000 square yards cement pavement, 12,000 square yards wood block, vitrified brick, bitulithic, asphalt, asphalt block, concrete or Hassam on

concrete base or bituminous binder macadam on chert or screened stone foundation; about 4500 linear feet granite curb or combined curb and gutter, all necessary storm sewers, inlets, etc.; bids received until January 19; Julien Smith, City Engineer. (See "Machinery Wanted.")

Ark., Helena.—City will pave street in Improvement District No. 6, comprising 25 blocks in residential section. Address The Mayor.

Fla., Dade City.—Tampa Bay Land Co., James F. Taylor, manager, Jacksonville, Fla., will expend \$5000 to open and grade streets. (See "Land Developments.")

Fla., Jacksonville.—Duval County Commissioners awarded contract to Engineering & Paving Co. of Jacksonville to pave New York Ave. distance of 2½ miles from point near Yukon to county line at Orange Park; Gall L. Barnard, County Engineer. (Call for bids lately noted.)

Fla., Lakeland.—City's plans for street paving include part brick and concrete foundation and part bituminous asphalt macadam; C. F. Brush, City Engineer. (Bond issue of \$60,000 recently reported voted.)

Ga., Dublin.—Laurens County Commissioners postponed election for voting on \$300,000 bond issue for road and bridge construction. Address County Commissioners. (Recently mentioned.)

Ga., Waycross.—City will construct 45,000 yards cement sidewalks to cost \$50,000; Jas. Sinclair, chairman finance committee, invites bids.

Ky., Lexington.—City awarded contract to Carey-Reed Company of Lexington to resurface with asphalt 3d St. from Jefferson to Henry St.; John Skain, Mayor. (Call for bids lately noted.)

Ky., Paducah.—James S. Caldwell, civil engineer, Paducah, made surveys and estimates cost of constructing Jefferson Davis highway at \$750,000; plans and specifications completed; road is to be uniformly macadamized and will extend from Bowling Green by way of Fair View and Paducah to Wickliffe, Ky., distance of about 324 miles; 237 miles will require complete reconstruction; remaining 87 miles are modern pike roads. (Recently mentioned.)

La., Crowley.—City awarded contract to C. S. Jackson & Co. for 118 concrete street crossings; R. J. Boudreaux, City Clerk. (Call for bids lately noted.)

Md., Baltimore.—Commissioners for Opening Streets, James H. Smith, president, selected 41 streets to be paved out of new annex loan of \$2,500,000, of which \$500,000 is available.

Mo., New Madrid.—King's Highway Road District of New Madrid county will receive bids until January 18 for construction of road, about 10½ miles; Hal Myers, secretary District Commissioners, Sikeston, Mo. (See "Machinery Wanted.")

N. C., Charlotte.—Finance committee authorized special \$112,000 bond issue for street improvements; this is additional to \$150,000 bond issue voted last July; Joseph Firth, City Engineer. (Recently mentioned.)

S. C., Lexington.—City contemplates paving Main St. Address The Mayor.

Okla., Hugo.—City will improve several streets, requiring 9150 cubic yards earth excavation, 5884 linear feet straight curb and 36,190 square yards pavement; paving material, rock asphalt; bids received until January 16; W. T. Echols, City Clerk. (See "Machinery Wanted.")

Tenn., Blountville.—Sullivan county voted additional \$200,000 bond issue for road construction. Address County Commissioners. (Recently mentioned.)

Tenn., Charlotte.—Dickson county will vote on \$100,000 bond issue for road construction. Address County Commissioners.

Tenn., Charlotte.—Dickson county will vote February 17 on \$100,000 bond issue for road construction. Address County Commissioners.

Tenn., Livingston.—Overton county will vote February 23 on \$150,000 bond issue for road construction. Address County Commissioners.

Tenn., Sparta.—White county will vote January 27 on \$30,000 bond issue for road construction. Address County Commissioners.

Tenn., Johnson City.—City will pave streets with brick, asphalt, bitulithic, wood block, granite or concrete and place concrete curb and gutter for Improvement District No. 9; bids received until February 1; J. F. McDonald, City Commissioner. (See "Machinery Wanted.")

Tex., Cleburne.—Justice Precinct No. 1 of Johnson county contemplates voting on \$300,000 bond issue for road and bridge construction. Address County Commissioners.



Tex., Greenville.—City awarded contract to Creosoted Wood Block & Paving Co., Gulfport, Miss., at \$1500 for paving on West Lee St.

Tex., Houston Heights.—City receives bids until January 27 for paving Boulevard from White Oak Bayou to Nineteenth Ave. with brick, creosoted blocks, asphalt, bitulithic or concrete; about 47,200 square yards paving; bids received until January 27; Howe & Wise, engineers, 722-723 First National Bank Bldg., Houston, Tex.; D. D. Barker, Mayor, Klam Bldg., Houston. (See "Machinery Wanted.")

Tex., Orange.—Orange county will expend \$200,000 on construction of gravel, shell or sand-clay roads; will open bids in April; engineer not yet employed; O. R. Sholars, County Judge. (Bond issue recently noted.)

Tex., Port Arthur.—City awarded contract to Lindsey & Smith, Dallas, Tex., for 125,000 square feet concrete sidewalk and 25,000 linear feet concrete curb.

Tex., Teacana.—Precinct No. 4 of Limestone county, including Mexia and Teacana, will construct 75 miles of rock road; cost \$50,000; will probably be built by contract. Address precinct Commissioners. (Bond issue of \$150,000 recently reported voted.)

Va., Jonesboro.—Lee county awarded contract to Robert Southern, Rogersville, Tenn., to grade and macadamize five miles of road beginning at Cumberland Gap.

### SEWER CONSTRUCTION

Ala., Bay Minette.—City contemplates construction of sewer. Address The Mayor.

Ala., Mobile.—City awarded contract to Sullivan, Long & Haggerty, Bessemer, A. S., at \$19,519.50 to construct storm sewers; about 22,000 feet terra-cotta and concrete sewers, six inches to six feet in diameter. (Call for bids lately noted.)

Ga., Summerville, P. O. Augusta.—Village awarded contract to Dysard Construction Co., Atlanta, Ga., for recently noted sewer and water-works construction; contract includes laying of 1150 linear feet 36-inch, 3200 feet 24-inch, 2500 feet 22-inch, 2600 feet 20-inch, 3300 feet 18-inch and 1400 feet 15-inch terra-cotta sewer pipe; also water-works materials; Geo. W. Summers, engineer, 412 Dyer Bldg., Augusta. (See "Water-works.")

Md., Baltimore.—City will receive bids until January 24 for constructing sanitary lateral sewer at Bayview, sanitary contract No. 80; work will include 4435 linear feet vitrified pipe sewer 8 to 12 inches diameter, 3000 cubic yards earth excavation in trenches, 1470 linear feet excavation in tunnel for 10 and 12-inch diameter sewers, 190 linear feet excavation in shaft for manholes, etc.; Chas. England, chairman Sewerage Commission. (See "Machinery Wanted.")

Mo., Kansas City.—City will construct complete sewage pumping plant in Santa Fe St. near United States harbor line of Missouri River; receive bids until January 16; E. E. Purcell, secretary Board of Public Works. (See "Machinery Wanted.")

Mo., Kansas City.—Board of Public Works will construct third section of Brush Creek sewer previously noted; total length of sewer, 4500 feet, consisting of 27-inch and 33-inch pipe; latter to be monolithic construction or reinforced concrete pipe; 27-inch pipe will probably be of clay; to extend from Main St. to Holly St., and will be part of Main Brush Creek sewer; cost \$30,000; will let contract January 19; Paul McGeehan, engineer in charge. (See "Machinery Wanted.")

N. C., Black Mountain.—City will soon have surveys made for construction of sewer system. Address The Mayor. (See "Water Works.")

Tenn., Johnson City.—City will construct sewers and storm-water drains for Improvement District No. 9; bids received until February 1; P. F. McDonald, City Commissioner. (See "Machinery Wanted.")

Tenn., Lebanon.—A. J. Casey has franchise to construct sewerage system, including septic tank.

Tenn., Lexington.—City engaged Richard C. Huston, Memphis, Tenn., to make surveys and superintend construction of sewer system, water-works and electric-light plant; estimated cost, \$50,000.

Tex., Waco.—City awarded contract to H. B. Gass & Co., Independence, Kans., at \$25,000 to construct additional sanitary sewers; work includes 2900 linear feet 15-inch, 12,000 linear feet 12-inch, 10,000 linear feet 10-inch; 6000 linear feet 8-inch vitrified clay sanitary sewer pipe; 108 linear feet 15-inch and 96 linear feet 12-inch cast-iron sewer pipe; P. A. Gorman, Commissioner Streets, Sewers and Public Improvements. (Call for bids lately noted.)

Va., Lawrenceville.—City voted \$50,000 bond issue for sewer system, water-works and electric-light plant. Address The Mayor.

W. Va., Barboursville.—City voted \$11,500 bond issue for construction of sewer system. Address The Mayor.

W. Va., Warwood.—City has plans by H. J. Watson, Wheeling, W. Va., for sewer system; estimated cost \$15,000; Charles B. Miller, Town Recorder.

### TELEPHONE SYSTEMS

Ala., Birmingham.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) will expend \$233,000 for improvements to telephone system; on North Side will extend about 9000 feet 400-pair underground cable from central office to Fountain Heights, to which will be connected 43,600 feet of aerial cable; on South Side will extend 390-pair cable to Mountain Terrace section and throughout that district by means of aerial cables, requiring about 32,600 feet of cables; on 14th St. will construct subway between Avenue I and Avenue N and extend 400-pair underground cable from main office to latter point and place additional aerial cable, requiring 12,500 feet of underground and 2000 feet aerial cable; will also make improvements in Woodlawn, East Lake and West End and extend system to Boyles, Inglewood and Corey. D. F. Turnbull is agent at Birmingham.

Mo., Joplin.—Bell Telephone Co. will make improvements to system to cost \$50,000 to \$60,000; will lay underground cable, install lateral lines, etc.

Tenn., Dyer.—Dyer Home Telephone Co. incorporated with \$5000 capital stock by W. L. Terrell, M. D. King, C. L. Haste, K. S. Horner and R. L. Newman.

Tenn., Memphis.—Cumberland Telephone & Telegraph Co., Leland Hume, general manager, Nashville, Tenn., contemplates erecting two additional stories to telephone exchange.

Tenn., Sparta.—Home Telephone Co., L. D. Cotton, president, will extend system.

Tex., Quanah.—J. L. Tullis, W. T. Perkins, F. B. Kirby and others organized company to construct telephone system; arranged with J. K. Lamberton to acquire rural line to Damsite and vicinity; will install common battery system and place wires under ground in fire limits.

### TEXTILE MILLS

Ga., Columbus—Colored Cottons, etc.—Eagle and Phenix Mills increased capital stock by \$250,000; purchased and now installing additional new machinery; has 59,356 ring spindles, 1728 looms, etc.

Md., Havre de Grace—Damask, etc.—Gambrell & Melville Mills Co. will undertake repairs and improvements; has 265 broad looms, 135 narrow looms, etc.

S. C., Fountain Inn—Print Cloth.—Fountain Inn Manufacturing Co. increased capital stock from \$300,000 to \$550,000; has 15,000 ring spindles, 400 narrow looms, 60 broad looms, etc. (Increase recently noted proposed.)

S. C., Simpsonville—Print Cloth.—Simpsonville Cotton Mills increased capital stock from \$500,000 to \$750,000; has 25,000 ring spindles, 600 looms, etc. (Increase recently noted proposed.)

### WATER-POWER DEVELOPMENTS

Ala., Montgomery.—Special correspondent of Manufacturers Record wires from New York, in part, as follows: "London syndicate has secured sites for hydro-electric development on Coosa, Tallapoosa and Tennessee Rivers, in Alabama, for delivering power in Birmingham, Montgomery and other cities in State. Development will commence at once. These developments will involve expenditures of \$20,000,000 to \$30,000,000. Detailed information as to plans or names of interested parties cannot be made public at this time, but it is probably this is the practical working of plans of Alabama Interstate Power Co. previously mentioned."

Ga., Atlanta.—Georgia Railway & Power Co. has authority from Railroad Commission to issue \$30,000,000 bonds and \$27,000,000 stock, as originally petitioned; will proceed to complete plans as heretofore detailed; is progressing with Tallulah Falls development, where 100,000 horse-power will be generated for transmission by electricity; also constructing steel towers for transmission lines between Atlanta, Cartersville, Rome, Tallulah, Gainesville, Social Circle and Lagrange; Charles Magee, president, Toronto, Canada; Alexander C. King, vice-president, and Forrest Adair, secretary-treasurer, both of Atlanta. (Other details previously stated.)

Ky., Cumberland Falls.—H. M. Byllesby & Co., 206 La Salle St., Chicago, Ill., are reported as having decided to finance development of Cumberland Falls water-power for transmission of electricity to Louisville, Knoxville, Nashville, Lexington, Cincinnati and other cities; surveys will soon be completed; expenditure of \$5,000,000 contemplated. Byllesby & Co. wire Manufacturers Record: "Not in position at present time to give out any information regarding Cumberland Falls development." (Previously mentioned.)

W. Va., Weston.—People's Electric Light, Ice & Water Power Co. incorporated with \$100,000 capital stock by M. S. Holt and others. (See "Ice and Cold Storage Plants.")

### WATER-WORKS

Fla., Madison.—City voted \$30,000 bond issue to purchase local water and light plants. Address The Mayor.

Ga., Columbus.—Water Board, Harry L. Williams, secretary, will petition City Council for \$350,000 for water-works construction.

Ga., Reidsville.—J. B. McCrary Company, engineers, Fifth National Bank Bldg., Atlanta, Ga., may be addressed for further information relative to water-works construction; contract recently noted awarded to B. F. Roberts, Macon, Ga.

Ga., Summerville, P. O. Augusta.—Village awarded contract to Dysard Construction Co., Atlanta, Ga., for recently noted water-works and sewer construction; contract includes laying of 7300 linear feet 10-inch cast-iron mains, with specials; three-foot coverings; 40 manholes; 70 catch-basins; 20 hydrants, eight-inch two-way; engineer, Geo. W. Summers, 412 Dyer Bldg., Augusta, Ga. (See "Sewer Construction.")

Ga., Washington.—City rejected bids for extension of water-works; will receive new bids until January 22 (not January 20 as recently noted); plans by Westinghouse, Church, Kerr & Co., engineers, New York; Boyce Ficklen, Jr., City Clerk. (See "Machinery Wanted.")

Ky., Paducah.—Paducah Water Co. increased capital stock from \$250,000 to \$300,000.

La., Roseland.—City will have plans prepared by Xavier A. Kramer, Magnolia, Miss., for artesian well. (Recently reported to have voted tax for \$5000.)

La., Shreveport.—City contemplates extending water-works to Queensborough Addition. Address The Mayor.

Md., Baltimore.—City will construct dam across Gunpowder River of solid concrete; according to plans submitted by Ezra B. Whitman, engineer, 2432 N. Charles St., and approved by Water Board, dam will be 185 feet high, with capacity of 2,000,000,000 gallons; estimated cost, \$500,000. (Recently mentioned.)

Md., Williamsport.—Samuel T. Williams, 223 N. Calvert St., Baltimore, Md., will prepare plans for water-works to be constructed; estimated cost, \$25,000; W. D. Byron, Mayor.

N. C., Black Mountain.—City will soon have surveys made for construction of water-works and sewer system; \$15,000 of bonds issued. Address The Mayor. (Previously mentioned.)

N. C., Charlotte.—Board of Water Commissioners will construct reservoir; bids received until February 1; Gilbert C. White, Charlotte, engineer; A. H. Wear, clerk. (See "Machinery Wanted.")

N. C., Rocky Mount.—City will extend water system; cost about \$3351. Address The Mayor.

Okla., Tulsa.—City Commissioners approved plans by L. H. Ruggles for water-works pumping station; brick, stone and steel; fireproof; 82x100 feet; steel door and window frames; asbestos roof; steel ceilings; cost \$7500. (Previously mentioned.)

Tenn., Lexington.—City engaged Richard C. Huston, Memphis, Tenn., to make surveys and superintend construction of water-works, electric-light plant and sewer system; cost estimated at \$50,000; will receive bids until January 15 for drilling deep well. (Previously reported to have voted bond issue. See "Machinery Wanted.")

Tex., Alpine.—J. L. Crawford and associates contemplate expenditure of \$3000 for water-works construction recently noted; plans not decided. (See "Machinery Wanted.")

Tex., Cleburne.—City voted \$128,000 bond issue for purchasing water-works and \$50,000 for improvements; plans erection of pumping station and office building; engineers, Burns & McDonnell, Scarritt Bldg., Kansas City, Mo.; C. W. Breech, Mayor. (Recently mentioned.)

Tex., Decatur.—City voted \$18,000 of bonds to purchase and repair water-works and electric-light plant. Address The Mayor. (Recently noted.)

Tex., Paducah.—City will receive bids until January 13 for furnishing 7440 feet eight-inch, 2860 feet six-inch, 574 feet four-inch cast-iron pipe, cast-iron specials, valves, 100,000-gallon elevated tank, 10-horse-power and 25-horse-power gasoline engine, 110-gallon-per-minute triplex pump and 500-gallon-per-minute rotary pump; Fountain-Shaw Engineering Co., engineer, Dallas, Tex. (See "Machinery Wanted.")

Tex., Port Lavaca.—W. E. Shell & Co. secured franchise to construct water-works.

Va., Lawrenceville.—City voted \$50,000 bond issue for water-works, electric light plant and sewer system. Address The Mayor.

Va., Norfolk.—Norfolk County Water Co.'s plans for additional water supply are progressing. J. W. Ledoux, chief engineer of American Pipe & Construction Co., 112 N. Broad St., Philadelphia, Pa., which company is engineer in charge of the work, states it is proposed to erect dam and low-service pumping station on North Landing River about five miles south of Kempsville, whence water will be pumped to sedimentation basin and filter plant at Kempsville; high-service pumps to pump water from clear-water basin to distribution system of water company, commencing at present pumping station and extending into city limits of Norfolk; exact character of pumping machinery not decided. (Cost previously estimated at \$300,000 to \$400,000.)

W. Va., Marlinton.—Marlinton Service Co. incorporated with \$30,000 capital stock by John Alexander and Dwight Alexander of Marlinton; John T. McGraw, John L. Hechmer and George A. Hechmer of Grafton, W. Va., to establish water-works, power plant and ice factory.

### WOODWORKING PLANTS

Ala., Mobile—Handles.—Mobile Handle Co. incorporated with \$25,000 capital stock to establish hickory handle factory; buildings in course of erection; H. C. Truelove, president; Dean Clark, vice-president; J. M. Bance, treasurer; O. M. Vance, secretary. (Recently mentioned.)

Ky., Louisville—Sash, Doors, etc.—Louisville Planing Mill & Hardwood Flooring Co. will rebuild at once factory and planing mill reported burned.

Ky., Maysville—Flooring.—Mason Lumber Co. purchased plant (with exception of cupola, etc.) of Maysville Foundry & Engineering Co.; will manufacture flooring, etc.

Ky., West Liberty—Handles.—Huntington Handle Co., Huntington, W. Va., will build hickory handle plant; W. O. Smith will be superintendent of operations.

N. C., High Point—Wagons and Buggies.—N. B. Beeson purchased building and will equip as wagon and buggy factory.

N. C., Wilmington—Columns.—Charendon Column Co. incorporated with \$100,000 capital stock by G. H. Lambert, J. H. Watters and J. O. Carr to manufacture porch columns, etc.

N. C., Winston-Salem—Veneering.—Mengel Box Co., Louisville, Ky., will construct veneering plant near tobacco-box factory recently reported.

Okla., Oklahoma City—Furniture.—New State Furniture Co. incorporated with \$7000 capital stock by Wyatt Strange, Samuel S. Churchill and J. G. Strong.

Tenn., Jackson—Handles.—W. P. Moore, secretary Merchants' Association, is corresponding with Mr. Jordan of Monticello, Ga., relative to establishing hickory, ash and gum handle factory.

Tex., Dallas—Cedar Chests.—Texas Cedar Chest Co. will rebuild plant recently reported burned; 50x100 feet; two stories; mill construction; building cost \$2100; bids opened January 1; cost of machinery, \$1500; daily capacity, six cedar chests. (See "Machinery Wanted.")

Tex., Iatan—Wagons.—Plaza Tractor Co. is being organized to manufacture express wagons, motor trucks and farm tractors. M. S. Palmer may be addressed. (See "Machinery Wanted.")

Tex., Sherman—Wagons and Vehicles.—J. F. Willis will erect brick building to be equipped as wagon and vehicle factory; cost \$10,000.

W. Va., Huntington—Wagons.—Julius Broh will erect four-story fireproof building; first and second floors to be occupied by Sears & Carter for manufacturing and repairing wagons, etc. (See "Warehouses.")

W. Va., Parkersburg.—American Handle Co., Cornelius B. Watson, secretary, will enlarge handle factory.



## BURNED

Ala., Avondale.—Eureka Stove Works at Fifth Ave. and 35th St.; estimated loss, \$35,000.

Ala., Birmingham.—Kirkpatrick Sand & Cement Co.'s plant at Powell Ave. and 24th St.; loss about \$8000.

Ala., Gadsden.—Boarding-house occupied by Mrs. Jeff Farrar and owned by Dr. C. L. Gulce; loss \$5000 to \$6000.

Ala., Gunterville.—G. S. Smith's steam laundry; loss \$4000 to \$5000.

Ark., Hot Springs.—Harry M. Wescott's barn and garage; loss \$4000.

Ala., Montgomery.—Southern Cotton Oil Co.'s cottonseed hullhouse; loss \$15,000.

Ala., Montgomery.—Armour & Co.'s packing plant damaged; loss \$3000; main offices, Chicago, Ill.

Ala., Newton.—Baptist Collegiate Institute buildings; loss about \$30,000.

Ark., Little Rock.—Residences of H. J. Potterbaum, Dr. W. S. Way and A. Snodgrass on W. 14th St.; cost \$15,000.

Ark., Magnolia.—R. W. Beene's store.

Ark., Monette.—Monette Supply Co.'s building; J. E. Blankenship Mercantile Co.'s building; Bank of Monette's building; loss \$50,000.

Ark., Pine Bluff.—St. Louis Southwestern Railway's machine and boiler shop; loss about \$50,000; C. D. Purdon, chief engineer, Tyler, Tex.

Ala., Tuscaloosa.—Will Sloan's residence.

Ark., Sulphur Springs.—Oaklawn Inn, owned by Arnetta Neam; loss \$20,000.

Fla., Tampa.—E. R. Gunby's residence at Grand Central and Brevard Aves.

Ga., Atlanta.—Frank Jeter's residence at 670 N. Boulevard, owned by Bell Bros.; loss about \$3500.

Ga., Cartersville.—B. L. Vaughan's residence, under construction at Market and Barlow Sts.; loss \$5000.

Ga., Clarksville.—John Martin's residence; loss \$10,000.

Ga., Douglas.—A. Overstreet's store; loss on building \$4000.

Ga., Lavonia.—Store occupied by J. D. Lewis and J. C. Blackwell; loss \$6000.

Ga., Tennille.—J. C. Hamilton's residence, owned by Rev. T. J. Holmes; loss \$3000.

Ga., Union City.—J. H. Harris' residence; loss \$10,000.

Ga., Warthen.—T. Warthen & Bro.'s store and other buildings; total loss, \$50,000 to \$60,000.

Ky., Bowling Green.—E. L. Hendrick's stock barn; loss \$4000.

Ky., Robards.—Woodmen of the World's hall; loss about \$5000.

Ky., Louisville.—Abe C. Levi Co.'s store; H. J. Gutman & Co.'s store; Swartz Company's store.

Ky., Louisville.—Louisville Planing Mill & Hardwood Flooring Co.'s plant at Parkland (suburb); loss estimated at \$120,000.

La., Anchorage.—Liblber Hotel.

La., Coushatta.—Carter Bros.' store; three buildings owned by Mrs. M. K. Sharp and occupied by Mrs. M. K. Sharp, Pack Gahan, Red River Democrat plant and others; total loss about \$12,000.

La., Doyle.—J. B. Davison's warehouse; G. F. Holden's building; S. S. McDonald's building; J. E. Efferon's building; L. A. Lard & Co.'s building; Stevens' Doyle Hotel.

La., New Orleans.—Building at 314 St. Charles St., owned by estate of F. J. Gasquet; loss \$6000.

La., Slidell.—Bryson Williamson's cotton gin.

Md., Arlington.—John F. Carter's residence on Park Heights Ave. near Glenn Ave.; loss \$3000.

Md., Baltimore.—Robert L. Phillips' residence at Kate Ave. and Pimlico Rd.; loss about \$3000.

Md., Baltimore.—Building at 322-24 W. Baltimore St., occupied by Brockton Shoe Co.; United Cigar Stores Co., A. Frank & Sons and others, owned by Jacob Wheatfield of New York; loss on building \$50,000.

Md., Baltimore.—Hamilton apartment-house at 813 Hamilton Terrace, owned by Dr. W. B. Finney; loss about \$50,000.

Mo., Carthage.—Ramsey Bros. Dry Goods Co.'s store; loss \$100,000.

Md., Mt. Ranier.—Postoffice building; Maurice E. Stallings, postmaster; building owned by Mt. Ranier Real Estate Co.

Md., Warwick.—St. Francis Xavier Roman Catholic Church. Address The Pastor, St. Francis Xavier Roman Catholic Church.

Miss., Brookhaven.—Joseph Heuck's residence; loss \$3500.

Miss., Jackson.—Barn, granary and stable at Rankin penitentiary farm; loss \$25,000 to \$30,000; Edmund F. Noel, Governor.

Miss., Jackson.—Watkins Building, owned by Watkins & Watkins, loss \$3000; Western Union Telegraph Co.'s plant.

Miss., Laurel.—T. L. Lee's livery barn at Pine St. and Central Ave.; loss \$5000 to \$6000.

Miss., Moss Point.—Crescent drug store, owned by Drs. D. G. McEachern and F. E. Rehfeldt; loss \$15,500.

Miss., Pass Christian.—Dwelling owned by A. M. Bailey and occupied by Mrs. J. K. Groveman; loss \$5000.

Mo., Cape Girardeau.—Phillips Lumber & Fuel Co.'s yards and offices; loss \$40,000.

Mo., St. Louis.—Building occupied by Mitchell-Gollar Shoe Co. and Namendorf Bros.; loss about \$150,000.

N. C., Lenoir.—Scoggin Drug Co.'s store; building owned by S. P. Burt.

N. C., Walkertown.—Walkertown Milling Co.'s plant; loss about \$20,000.

N. C., Whitakers.—Whitakers Oil Mill Co. states that cottonseed-oil mill was not burned; hullhouse only was destroyed.

Okla., Chattanooga.—Chattanooga State Bank; Herb Lindley's drug store; Telephone Exchange; J. W. Shull's building; total loss about \$12,000.

Okla., Crowder.—Union depot owned by Missouri, Kansas & Texas Railway system, S. B. Fisher, chief engineer, St. Louis, Mo., and Fort Smith & Western Railway, W. M. Bushnell, general manager, Fort Smith, Ark.

Okla., Fallis.—S. A. Hunt's store and residence; A. Rosenberg's building; loss \$10,000.

Okla., Talihina.—St. Louis & San Francisco Railroad's coal chute; loss about \$10,000; F. G. Jonah, chief engineer, St. Louis, Mo.

S. C., Blairs.—Blair-Frazier Company's store and warehouse; loss \$45,000.

S. C., Charleston.—C. O. Witte's residence and W. G. Mazyck's residence, both on Sullivan's Island; loss about \$25,000 each.

S. C., Columbia.—Columbia Machine and Iron Works at 802 Gervais St.; Gibbs Machinery Co.'s building at 804 Gervais St.; Armour & Co.'s plant at 806 Gervais St., under management of M. B. Minton, loss on building about \$8000; Dozier Bldg. at 810-816 Gervais St., owned by estate of late L. B. Dozier, and occupied by Southern States Supply Co. and H. G. Werts & Co.

Tenn., Knoxville.—W. A. Coleman's building at 1012-14-16 Sooy St.; loss \$4000.

Tenn., Lafayette.—E. W. Oglesby's residence; loss about \$3000.

Tenn., Nashville.—Dwelling and outhouses on Nolensville Rd., owned by Robert Neiderhauser, proprietor of Golden Spring Dairy; loss on dwelling about \$4000.

Tex., Brownwood.—Plaza Hotel, on East Lee St., owned by J. W. Spangenberg; loss \$50,000.

Tex., Dallas.—Sam D. Dealey's residence at Tilden and Burr Oak Sts., Oak Cliff; loss \$7500.

Tex., El Paso.—Dr. F. W. Gallagher's building at 315 E. Overland St.

Tex., Hillsboro.—E. P. Phillips' undertaking establishment; loss \$3500 to \$4000.

Tex., Houston.—Industrial Cotton Oil Co.'s main building, boiler-house and storage-room; loss reported by dispatches, \$500,000 to \$750,000.

Tex., Houston.—Industrial Cotton Oil Co.'s main building, boiler-house and storage-room; loss \$50,000 to \$75,000.

Tex., Jarrell.—Corn Hill Mercantile Co.'s store; loss about \$10,000.

Tex., Morgan.—Morgan Hardware Co.'s building, owned by T. C. Willingham of Dallas, Tex.; loss \$4000.

Tex., Naples.—Dr. W. J. Matthews' residence; loss \$3000.

Tex., San Antonio.—W. L. Richter's bakery damaged; loss \$3500 to \$4000.

Tex., Waco.—Mrs. Minnie Gariand's apartment-house on North 5th St.; loss \$10,000.

Tex., Waco.—V. Kemendo's building; Fraternal Order of Eagles' building, owned by J. C. Walker's estate; loss about \$8000.

Va., Burkeville.—Hotel Willson; Hotel Virginia; A. W. Overton's residence; Douglas Hamilton's livery stable; loss about \$10,000.

Va., Port Norfolk, P. O. at Portsmouth.—Planters' Manufacturing Co.'s storage shed No. 2; loss \$20,000.

Va., Newport News.—J. W. Courtney's main office building at 22d St. and C. & O. Railroad.

Va., Norfolk.—A. C. Cromwell's residence in Lafayette Park; loss about \$30,000.

Va., Norfolk.—Old Y. M. C. A. building, owned by Grandy estate.

Va., Rockymount.—Rockymount Hotel, owned by Bedford Robertson; loss \$12,000.

W. Va., Thomas.—Davis Coal & Coke Co.'s

blacksmith, carpenter and machine shops and winding-room at drift mine near Thomas; estimated loss, \$12,000.

W. Va., Ronceverte.—J. Collins' building; loss about \$4000.

## BUILDING NEWS

## BUILDINGS PROPOSED

## APARTMENT-HOUSES

Ga., Atlanta.—Mrs. Willie R. Hawes, 35 Druid Circle, has plans by Morris & Morris, Atlanta National Bank Bldg., Atlanta, for apartment building; 36x49 feet; 11 rooms; concrete; tile roof; hot-air furnace; electric lighting; conduit wiring; tile sidewalks; cost \$6000; day labor. (Recently noted under "Stores.")

Ky., Middlesboro.—Weinstein Bros. will remodel building for offices and apartments. (See "Bank and Office.")

Md., Baltimore.—Edgcomb Apartments, Thomas R. Bond, agent, 619 Gaither Bldg., has plans by Theo. Wells Pietsch, 1001 American Bldg., Baltimore, for apartment-house at Pimlico Rd. and Wiley Ave.; three stories; 172x45 feet; brick; 12 apartments; will soon receive bids; G. E. Painter & Co., 324 N. Charles St., Baltimore, engineers in charge.

Md., Baltimore.—Oscar L. Tunis is having plans prepared by Henry J. Tinley, 312 N. Charles St., Baltimore, for three apartment-houses at Windsor Hills; four stories; brick; stone trimmings; 28x40 feet; cost \$45,000; construction by owner.

Md., Baltimore.—Oliver B. Wight, 705 Munsey Bldg., Baltimore, is preparing plans for apartment-house on St. Paul St. between 26th and 27th Sts.; 35x100 feet; brick, with pressed-brick front and stone trimmings; galvanized-iron cornices; electric lights; steam heat; slag roof; owner's name withheld.

Md., Baltimore County.—O. L. Turner, Windsor Hills, has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, Md., to erect apartment-house; three buildings; 32x43 feet; four stories; brick; steam heat; gas and electric lighting; cost \$12,000 each; construction by owner.

Mo., Kansas City.—J. B. Robinson will erect apartment-house at Linwood Blvd. and Brooklyn Ave.; eight apartments; cost \$40,000.

Mo., St. Louis.—V. E. Rhodes will erect two three-story tenement-houses at 6015-23 Maple Ave.; cost \$19,000.

Mo., St. Louis.—Gerard O. Borgstede of Stellar Realty Co. is arranging to erect apartment-house; three stories; six apartments; frontage 100 feet; cost \$30,000.

N. C., Wilmington.—C. W. Polvogt has plans by Grossman & Mahler, Wilmington, for proposed store and apartment building at 5th and Red Cross Sts.; will contain drug store and three seven-room apartments; gas and electric lights; cost about \$8000.

S. C., Columbia.—F. L. Brown will erect apartment, theater and store building; fireproof. (See "Theaters.")

Tenn., Memphis.—Dr. W. W. Mitchell will erect apartment-house at 402 Pontotoc St.; cost \$3000.

Tenn., Memphis.—C. W. Thompson will erect store and apartment building. (See "Stores.")

Tex., El Paso.—Great Texas Realty Co. will erect apartment-house at 216 W. Rio Grande St.; two stories; light brick; mission effect; built-in beds; concealed furniture; oak floors; screened sleeping porches to every apartment; steam heat; tile bathrooms; cost \$5000.

Tex., San Antonio.—Henry T. Phelps, Gunther Bldg., San Antonio, prepared plans for apartment-house; cost \$50,000 to \$60,000.

Va., Richmond.—William L. Carneal will erect brick tenement-house on Main St. between Rowland and Sycamore Sts.

Va., Richmond.—Anthony Kramer will erect brick tenement-house on West St. between Hanover and Stuart Aves.

Va., Richmond.—Miss Elizabeth V. Lee will erect tenement-house at 2915-17 W. Grace St.; two stories; brick; cost \$9000.

Va., Richmond.—John A. Briggs will erect tenement-house at 2013 W. Grace St.; two stories; brick; cost \$9000.

Va., Richmond.—P. H. Bruner will erect brick tenement-house and detached brick dwelling on Davis Ave. between Hanover and Grove Aves.; cost \$12,000.

## ASSOCIATION AND FRATERNAL

Ga., Atlanta.—Royal Arcanum, Klier Bldg., is promoting erection of fraternal insurance building; Sol Benjamin, president of Novelty Straw Hat Works, is interested.

Miss., Biloxi.—Ancient Free and Accepted Masons rejected all bids to erect lodge building at Main and Lameuse Sts. and will probably receive new bids; cost about \$17,000. (Recently noted.)

S. C., Bennettsville.—Ancient Free and Accepted Masons will receive bids until February 2 to erect three-story brick-construction Masonic Temple; further particulars, conditions, etc., at office of Ernest V. Richards, architect, Bennettsville.

Tex., Sherman.—Sherman Camp No. 9, Woodmen of the World, will erect lodge building on West Lamar St.; cost \$15,000.

## BANK AND OFFICE

Ark., Hot Springs.—Citizens' National Bank is arranging to erect bank and office building; six stories; steel construction; cost, including site, \$200,000.

Ark., Texarkana.—Texarkana National Bank is reported as contemplating erection of bank and office building; seven stories; cost \$150,000 to \$200,000.

Fla., Tampa.—Tampa Gas Co. purchased building at Madison and Tampa Sts. and will expend about \$5000 for improvements.

Ark., Arkansas City.—Bank organized with J. L. Parker, president, El Dorado, Ark.; temporary offices in Townsend Building; will soon erect permanent bank building.

Ga., Atlanta.—Atlanta Realty Co. organized with Joel Hurt, president; Henry D. Wey, vice-president; Palmer Johnson, secretary-treasurer; increased capital stock from \$1,000,000 to \$2,000,000; will erect office buildings and possibly hotel.

Ga., Augusta.—Harry B. King is having plans prepared by Bellonby & Whaley, Irish-American Bank Bldg., Augusta, for office building; 75x250 feet; three stories; brick; steam heat.

Ga., Winder.—Winder Banking Co. will erect three or four-story fireproof bank, store and office building to replace structures previously reported burned; plans under consideration.

Ky., Middlesboro.—Weinstein Bros. will make improvements to building at 20th St. and Cumberland Ave.; will remodel second floor for offices and third floor for apartments; will install steam-heating plant; retain lower floor for stores.

La., Lottie.—J. M. Wilson is interested in organization of bank; will erect building. (See "Machinery Wanted.")

N. C., Rocky Mount.—J. W. Hines will remodel and re-equip structure reported burned or erect new structure to replace same; is considering erection of five-story office building; fireproof construction; concrete and steel.

S. C., Greenville.—J. W. Norwood purchased site at Main and Broad Sts. and contemplates, it is reported, erection of office building; site 41x100 feet.

Tenn., Dickson.—Dickson State Bank, Thos. Halbrook, president, L. S. Pentecost Bldg., Main St., will erect bank building.

Tenn., Nashville.—American National Bank, A. H. Robinson, vice-president, is reported as considering enlarging bank building.

Tenn., Nashville.—American National Bank will erect bank building; probably Tennessee marble construction, with mahogany interior finish.

Tex., Houston.—D. R. Beatty will erect office building on Main St.; six stories; foundation to support additional stories; half of basement for Turkish bath appliances, other half for grillroom; 130 offices; plans by Cook & Co., Houston.

Tex., Waco.—Anicable Life Insurance Co. will, it is reported, erect office building; two stories.

Va., Roanoke.—Davis & Stephenson will erect office building; two stories; brick; cost \$6000.

W. Va., Huntington.—Fred C. Prichard of



Robson-Prichard will erect office building at Sixth Ave. and 9th St.; lower floor probably for stores.

### CHURCHES

Ala., Bessemer.—First Methodist Church will resume construction on proposed \$50,000 edifice. Address The Pastor, First Methodist Church.

Ala., Birmingham.—Norwood Methodist Church, Rev. R. E. Tyler, pastor, Thirtieth Ave. and 31st St., will erect edifice; cost not less than \$100,000.

Ala., Jasper.—Methodist Church is reported to erect edifice. Address The Pastor, Methodist Church.

Ark., Little Rock.—Capitol View Methodist Church, Rev. H. F. Buhler, pastor, is having plans prepared by R. P. Morrison, Little Rock, for edifice; two stories; brick; cost \$40,000.

D. C., Washington.—All Souls' Unitarian Church, 14th and L Sts. N. W., James A. Sample, president of Citizens' Saving Bank, 1406 New York Ave. N. W., chairman of trustees, plans to erect church building and Edward Everett Hale memorial parish hall, to cost, including site, about \$300,000.

Fla., Boynton.—Episcopal Church, Rev. William Crane Gray, bishop, will erect chapel at Poinciana and Pine Sts.

Fla., Jacksonville.—Trustees of Livingston Memorial Mission Fund, J. K. Kooker, president, plan erection of Methodist Episcopal Church at Parker and Swift Sts., Fairfield.

Ga., Atlanta.—Pryor Street Presbyterian Church will erect edifice; cost \$15,000. Address The Pastor, Pryor Street Presbyterian Church.

Ga., Madison.—First Methodist Church is having plans prepared by Sayre & Baldwin, 405 Beekley Bldg., Anderson, S. C., for Sunday-school addition.

Ky., Whitesburg.—Baptist congregation is having plans prepared for brick edifice. Address The Pastor, Baptist Church.

La., Baton Rouge.—First Christian Church, Rev. John Stevens, pastor, will erect edifice at East Boulevard and Africa St.; pressed brick; cost \$9000; plans in progress.

La., Shreveport.—Queensborough Methodist Church, Rev. H. W. Jamieson, pastor, will erect edifice; cost \$10,000.

La., New Orleans.—Dominican Priests, Father Lorente, vicar provincial for Spanish Dominicans in United States, plan to erect edifice, probably on Canal St.; Pedro Roveda, Mexico City, Mexico, will, it is reported, submit plans.

Md., Baltimore.—Roland Avenue M. E. Church, Rev. W. C. Parrish, 4004 Roland Ave., pastor, is having plans revised and will receive bids until January 12 to erect edifice; plans by A. Lowther Forrest, 11 E. Lexington St., Baltimore; John K. McIver, 7 Clay St., Baltimore, is estimating. (Previously mentioned.)

Md., Baltimore.—Cathedral Foundation of Diocese of Maryland is having new plans prepared by Cram, Goodhue & Ferguson, 170 Fifth Ave., New York, for cathedral group for Protestant Episcopal Church at Homewood, to include residence, diocesan library, diocesan hall, choir school and cathedral proper; main auditorium probably to have seating capacity of 2500 to 3000; probably sandstone construction; Rev. Edwin B. Niver, 1014 St. Paul St., chairman of trustees. (Recently noted.)

Mo., St. Louis.—Richmond Heights Presbyterian Church, Rev. L. W. Cunningham, pastor, has plans for proposed edifice and will soon award contract for construction.

N. C., Asheville.—First Baptist Church, Rev. Calvin B. Waller, pastor, will erect mission chapel; 60x100 feet; ordinary construction; hot-air heat; electric lighting; cost \$6000 to \$8000; plans not definitely made. (Recently noted.)

N. C., Lexington.—First Reformed Church, Rev. Jacob A. Leonard, pastor, will erect Sunday-school building; cost not less than \$6000.

S. C., Charleston.—Centenary Church will expend \$3500 to repair church. Address The Pastor, Centenary Church.

Tex., Houston.—Oblate Fathers of San Antonio, Father Constantineau, representative, will erect proposed church, school and priest's house.

Tex., Pecos.—Pecos Methodist Episcopal Church, T. B. Prunett, chairman of building committee, is receiving bids to erect edifice; concrete and brick; main and sub auditorium; eight Sunday-school rooms, etc.; cost \$22,500.

Tex., Sherman.—Key Memorial Methodist Church will complete edifice on East Hous-

ton St.; cost \$20,000. Address The Pastor, Key Memorial Methodist Church.

Va., Clifton Forge.—Baptist church will expend about \$15,000 to erect addition to edifice; F. B. Westerman, E. A. Snead, George T. Davis and others, building committee.

### CITY AND COUNTY

Ala., Livingston.—Jail.—Sumter county will expend \$16,500 to \$17,200 to erect jail; hot-water heat; electric wiring; plans by Frederick Aunsfeld, Montgomery, Ala.; proposals received by P. B. Jarman. (Recently noted to receive bids until January 8.)

Ark., Fort Smith.—City Hall.—City and Fort Smith District are considering erection of city hall and courthouse; four stories; steel, marble and reinforced concrete construction; cost about \$250,000; John W. Howell, R. G. Moore, W. F. Blocker and others, building committee.

Fla., Clearwater.—Jail.—Pinellas County Commissioners will have plans prepared for jail.

Ga., Waycross.—Fire Stations.—City is considering erection of one or two additional fire stations and installation of fire-alarm system. Address The Mayor.

Ky., Greenville.—Jail.—Muhlenburg county will erect two-story jail; to accommodate 40 prisoners; steam heat; J. J. Rice, County Judge, may be addressed. (Recently noted.)

Ky., Louisville.—Hospital.—Hospital Commission will receive bids for work included in sections 3 to 16 in specifications for Louisville public hospital until January 17, including main work of erection, such as buildings, plumbing, heating and lighting; plans by D. X. Murphy & Bro., Louisville. (Recently noted.)

La., Shreveport.—Natorium.—Mayor J. H. Eastham is having plans prepared by George Wilson, City Engineer, for natatorium at State fair grounds; 400x200 feet.

Md., Baltimore.—Barn.—Park Board will erect barn to replace burned structure; brick; cost \$6000; William S. Manning, general superintendent of city parks, Druid Hill Park.

Okl., Hobart.—Library.—Board of Control of Carnegie Library will award contract to erect library building on January 20. (Previously noted.)

Tenn., Chattanooga.—Jail.—Hamilton County Courthouse Commission, Hamilton National Bank Bldg., will receive bids until noon February 15 for erection of jail; certified check for \$2500 payable to M. M. Allison, chairman; plans and specifications may be had at office of Barnwell & Jones, architects, Chattanooga, after January 15 on deposit of \$25. (Recently noted.)

### COURTHOUSES

Mo., Benton.—Scott County Court will receive sealed proposals until 10 A. M. February 6 to erect fireproof courthouse; plans and specifications on file at offices of James McPheeters, County Clerk, and H. H. Hohen-schild, architect, 312 Navarre Bldg., St. Louis, Mo.; applications for plans to be addressed to architect. (Previously noted.)

Ark., Fort Smith.—City and Fort Smith District are considering erection of city hall and courthouse. (See "City and County.")

### DWELLINGS

Ala., Birmingham.—James J. Smith contemplates rebuilding residence recently reported burned.

Ala., Gadsden.—First Methodist Church will erect parsonage. Address The Pastor, First Methodist Church.

Ala., Jasper.—West Alabama Real Estate & Insurance Co. will erect number of cottages on Alabama Ave.

D. C., Washington.—John B. Henderson, 1601 Florida Ave. N. W., will erect addition to dwelling at 1640 16th St. N. W.; cost \$16,000.

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., will erect two dwellings on C St. between 8th and 9th Sts. N. E.; 20x35 feet; eight rooms and bath; ordinary construction; plans by Frederick T. Schneider, 1314 F St. N. W., Washington; construction by owner.

D. C., Washington.—S. J. Prescott Company, Inc., 514 13th St. N. W., will erect two-story brick dwellings at 1300-11 W St. N. W.; cost \$5000.

Fla., Tampa.—La Sociedad Anonima el Trabajo will erect dwelling; one story; wood; 41x28 feet; cost \$3600.

Ga., Atlanta.—S. Goldstein will erect residence at 47 Kelly St.; cost \$3600.

Ga., Atlanta.—Gresham Manufacturing Co.

will erect five dwellings at 285 to 303 Bedford Pl.; cost \$25,000.

Ga., Atlanta.—J. N. Renfro, agent, will erect residence at 855 Peachtree St.; cost \$4500.

Ga., Atlanta.—J. N. Renfro and N. M. Daniel will erect two dwellings at 263-65 North Blvd. and one at 137 Highland Ave.; cost \$11,500.

Ga., Atlanta.—Jacob Fox will erect residence on 16th St.; cost \$3650.

Ga., Atlanta.—William H. Schroeder will erect residence at 31 W. 14th St.; cost \$5400.

Ga., Atlanta.—E. W. Grove Realty Co. Incorporated by E. W. Grove, St. Louis, Mo.; F. L. Seely, Atlanta, and others will take over real estate holdings in Atlanta of E. W. Grove and expend proceeds of \$250,000 bond issue to erect number of bungalows and stone cottages, etc.

Ga., Atlanta.—Dillon-Morris Company will erect residence at Highland and Adair Aves. to cost \$5500; three brick, frame and granite bungalows on Brookline Ave. near Stewart Ave., cost \$2750 each; five bungalows on Crew St. near Atlanta Ave. to cost \$2400 to \$2500 each, and 44 bungalows in various sections of city.

Ga., Augusta.—G. R. Lombard has plans by G. Lloyd Preacher, Dyer Bldg., Augusta, for dwelling; stucco; tile roof; cost \$6000.

Ga., Cartersville.—B. L. Vaughan will rebuild residence at Market and Bartow Sts., reported burned at loss of \$5000.

Ga., Dublin.—J. E. Smith, Jr., is having plans prepared by R. B. McGeekin, Dublin, for residence; two stories; brick; cost \$15,000.

Ga., Dublin.—Horace Knight will erect residence; cost \$4500.

Ga., Dublin.—W. T. Smith will erect residence; artificial stone; cost \$4000.

Ga., Dublin.—V. L. Stanley will erect \$4000 residence.

Ky., Louisville.—H. N. Shrader will erect three cottages at 2728-32 W. Kentucky St.; frame; cost \$3000.

Ky., Louisville.—F. L. Light will erect dwelling at 1376 S. Floyd St.; two stories; brick; cost \$3500.

La., New Orleans.—Anette Lapierre will erect double cottage; cost \$3500.

Md., Baltimore.—John Glenn, Jr., Glenn Bldg., 16 St. Paul St., is having plans prepared by Edward H. Glidden, Glenn Bldg., 16 St. Paul St., Baltimore, for dwelling at Charles and 31st Sts.

Md., Baltimore.—Hyatt & Johnson are having plans prepared by Jacob F. Gerwig, 600 Equitable Bldg., Baltimore, for block of dwellings on Woodburne Ave.; brick with marble trimmings; cost about \$20,000.

Md., Baltimore.—Thomas F. Christopher, 1716 E. Madison St., will erect cottage at Essex.

Md., Baltimore.—Gordon K. Chappell, 512 N. Calhoun St., is reported to erect number of dwellings on Cokesbury La., Kennedy Ave. and 23d St.; two stories; brick.

Md., Baltimore.—Kathland Realty & Construction Co. has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for dwelling on Oakfield Ave. near Springdale Ave., West Arlington; frame; two and a half stories; 28x34 feet; slate roof; steam heat; cost \$4000.

Md., Baltimore.—John J. Carlin, 215 St. Paul St., will erect number of cottages on Harlem Ave. and 7th St.

Md., Baltimore.—Provident Realty Corporation, Garrison and Piedmont Aves., has plans by Henry J. Tinley, 212 N. Charles St., Baltimore, for dwelling at Mondawmin and Ellanore Aves.; two and a half stories; 26x30 feet; frame; slate roof; steam heat; cost \$3500.

Md., Baltimore.—Edward J. Storck, 86 Gunther Bldg., has plans by H. E. Storck, Winston Ave. near York Rd., Baltimore, for 17 dwellings on Fayette St. between Elwood and East Aves. and Elwood Ave. between Fayette St. and Philadelphia Rd.; two stories; brick; 12x45 feet; cost \$21,250.

Md., Baltimore.—Charles H. Montgomery has plans by F. E. Beall, 213 St. Paul St., Baltimore, for seven dwellings, 14x42 feet, on Homestead St. near Independence Ave., and two, 13x48 feet, on Gorsuch Ave. near Independence Ave.; two stories; brick; cost \$16,500.

Md., Baltimore.—William F. Beiswanger has plans by E. Oscar Lohmeyer, 3013 Belmont Ave., Baltimore, for nine dwellings on Gorsuch Ave. between Polk St. and Kennedy Ave.; two stories; brick; 14x30 feet; cost \$16,000.

Md., Baltimore.—E. J. Gallagher, 2612 Fleet St., will erect number of dwellings on Philadelphia Rd.; ornamental brick; two stories.

Md., Catonsville.—John C. Rose, 49 Post-

office Bldg., Baltimore, Md., will, it is reported, erect cottage near Catonsville.

Md., Catonsville.—J. Leland Hanna, 822 Equitable Bldg., Baltimore, Md., purchased about nine acres of land on Edmondson Ave. between Catonsville and Ellicott City and will erect number of cottages.

Md., Roland Park.—Thomas L. Jones has plans by Walter M. Gieske, 66 Gunther Bldg., Baltimore, Md., for dwelling at Overhill and Keawick Rds.; brick; Colonial architecture; 48x29 feet; hot-water heat; parquet and tiled floors; interior trimmed in red and white mahogany.

Miss., Vicksburg.—Philip Feld has plans by M. J. Donovan, Vicksburg, for proposed dwelling; 25x75 feet; brick; ordinary construction; fireplaces; electric lighting; cost \$3000; bids opened January 2.

Mo., Kansas City.—A. Freeman will erect three brick veneer dwellings at 1512-16 Poplar St.; cost \$2900.

Mo., St. Louis.—Bush-Burns Realty Co. will erect two two-story dwellings at 4319-29 McPherson St.; cost \$30,000.

Mo., St. Louis.—G. G. Powell, vice-president of F. A. Steer Furnishing Goods Co., will erect residence.

Mo., St. Louis.—Bush-Burns Realty Co. will erect two two-story dwellings at 4319-29 McPherson St.; cost \$20,000.

Mo., St. Louis.—E. W. Harding will erect residence at 5330 Terry St.; two stories; cost \$3000.

Mo., St. Louis.—G. J. Rupp will erect two-story dwelling at 5342 Conde St.; cost \$4000.

N. C., Lumberton.—Dr. W. A. McPhaul has plans by Frank Simpson, Raleigh, N. C., for residence; two stories; 12 rooms; cost \$12,000.

S. C., Iva.—S. E. Anderson has plans by Sayre & Baldwin, 405 Beekley Bldg., Anderson, S. C., for dwelling.

N. C., Tryon.—N. B. Coogan has plans by F. Michail, Belmont College, Belmont, N. C., for dwellings; bungalow style; 30x50 feet; hot-water or steam heat; day's work under supervision of Charles Sayels, Tryon. (See "Machinery Wanted.")

Okl., Oklahoma City.—Dr. A. C. Enoch and associates acquired building lots in northwestern portion of city, and will improve with dwellings; will immediately expend \$50,000 for improvements.

S. C., Laurens.—Belton Diver has plans by Sayre & Baldwin, 405 Beekley Bldg., Anderson, S. C., for dwelling.

S. C., Williamston.—D. P. Gray has plans by Sayre & Baldwin, 405 Beekley Bldg., Anderson, S. C., for residence; cost \$4600.

Tenn., Memphis.—A. J. Boots will erect six dwellings at 562-68-72-78-82-88 Stevens Ave.; total cost, \$9000.

Tenn., Memphis.—W. T. Hudson will erect residence to be equipped with heating plant at 118 N. Montgomery St.; cost \$3800.

Tex., El Paso.—Albert Rodriguez, Box 5, will erect two dwellings; 30x57 feet; brick walls; shingle roof; no heating plant; electric lighting; cement sidewalks; plans and construction. (Recently noted.)

Tex., El Paso.—Mayfield Realty Co. will erect two bungalows with basements; heating plants; hardwood floors.

Tex., Houston.—H. E. Womack will erect residence; eight rooms; cost \$5000.

Tex., Houston.—James L. Autry, 2114 Milan St., will erect dwelling; two stories, basement and attic; frame; three bathrooms; four porches; tile or slate roof; tile and concrete for bathrooms and porches; interior, hardwood in part; cost \$20,000. (See "Machinery Wanted.")

Tex., Houston.—T. L. Denman will erect residence; eight rooms; cost \$4000.

Tex., Houston.—Oblate Fathers of San Antonio, Father Constantineau, representative, will erect priest's house, school and church.

Tex., Midland.—Henry M. Half has plans by W. H. Kelly, Midland, for dwelling to cost about \$20,000.

Tex., Sherman.—Dupont B. Lyon will erect residence at King and Crockett Sts.; cost \$15,000.

Tex., Sherman.—Frank Schuult will erect cottages in Greenmount Addition; cost \$20,000.

Tex., Sherman.—George E. Hardwick will erect block of cottages on North Walnut St.; cost \$20,000.

Va., Richmond.—O. J. Davis will erect four dwellings on Floyd Ave.; brick construction; cost \$12,000.

Va., Richmond.—P. H. Bruner will erect detached brick dwelling. (See "Apartment-houses.")

Va., Richmond.—W. Creed Davis has plans by Carneal & Johnston, Richmond, for dwell-



log on Monument Ave. between Allison and Addison Sts.

Va., Roanoke.—C. G. Armistead will erect dwelling at Eighth Ave. and Henry St. S. W.; two stories; brick; cost \$4900.

Va., Roanoke.—R. E. Dance will erect dwelling; two stories; brick cased; cost \$4000.

## GOVERNMENT AND STATE

Tex., Bonham.—Postoffice.—Treasury Department, Office of Supervising Architect, Washington, D. C. Proposals received at this office until 3 P. M. February 15, and then opened, for construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and lighting fixtures) of one-story-and-basement non-fireproof building of about 4235 square feet ground area, brick-faced, stone-trim wings, for United States postoffice at Bonham, Tex., in accordance with drawings and specifications, copies of which may be obtained from custodian of site at Bonham, Tex., or at this office, at discretion of Supervising Architect James Knox Taylor.

## HOTELS

D. C., Washington.—Arlington Hotel Co., George Howard, president; 15th St. and New York Ave. N. W., has plans by F. M. Andrews & Co., 1 Madison Ave., New York, for Arlington Hotel to replace present structure. (Previously mentioned.)

Ga., Atlanta.—Dr. H. F. Scott is reported as considering erection of hotel at Peachtree and W. Baker Sts.

Ga., Atlanta.—Hotel Ansley Investment Co. will have plans prepared by B. B. Davis, Louisville, Ky., and W. L. Stoddard, New York, associated architects, for hotel; 12 stories; 100x135 feet; 306 bedrooms; all bedrooms to have running water except 30, which will have private baths; two stories to be of tile; other pressed gray brick; colored-tile mansard roof; subbasement to contain refrigerating plant, etc.; rathskeller to be in basement proper; first floor to contain stores and lobby; mezzanine floor, buffet, dining-rooms, office, ladies' rooms, etc.; tenth floor, running through to twelfth floor, will contain convention hall with seating capacity for 500 to 600; cost \$750,000; bids will be asked and contract let in about 10 days. (Recently noted incorporated with \$200,000 capital stock by Edwin P. Ansley of Atlanta and J. B. Pound, Chattanooga, Tenn.)

Ga., Atlanta.—Atlanta Realty Co. will probably erect hotel. (See "Bank and Office.")

Ga., Burkeville.—Hotel Willson Co. will rebuild hotel reported burned.

Ky., Louisville.—Tyler Hotel Co. will erect four additional stories to Tyler Hotel at 2d and Jefferson Sts.; cost \$50,000 to \$80,000.

La., Shreveport.—Company organized by John Furlong and others; has control of Phoenix Hotel and will erect larger structure to replace same.

Md., Baltimore.—Robert C. Ulrich, architect, Gunther Bldg., Baltimore, invited following contractors to estimate on conversion of building at 435-437½ Druid Hill Ave. into hotel: John Cowan, 106 W. Madison St.; Thomas P. Johns, 405 W. Monument St.; Charles Milke, 232 N. Chester St.; Lorenz Schoenlein, 227 E. Baltimore St., all of Baltimore, and Louis Pencus.

Md., Baltimore.—A. Stanley Stanford of Brunswick, Ga., is reported as contemplating erection of hotel.

Miss., Jackson.—George Lemon is reported to expend several thousand dollars for improvements to Lemon Hotel.

Mo., Kansas City.—Rockhill Manor Investment Co., organized by Charles O. Jones, A. O. Thompson and others, will, it is reported, erect apartment hotel at 43d St. and Robert Gilham Rd.; probably four stories; cost \$100,000.

N. C., Wrightsville Beach, P. O. at Wilmington.—Wrightsville Realty Co. incorporated with \$50,000 capital stock by Thomas H. Wright, B. O. Stone and Charles N. Evans; has plans by H. E. Bonitz, Wilmington, for 40-room hotel; cost \$15,000 to \$20,000.

S. C., Greer.—C. C. Handman and others, Pelzer, S. C., will make improvements to hotel; cost \$16,500.

Tex., Dalworth.—Mrs. Louis Rittner awarded contract to Nix & Cowdin, Grand Prairie, Tex., to erect roadhouse; main building 70x35 feet; two stories; addition 60x100 feet to be erected later; frame; natural gas heat, fireplaces, iron fire logs, etc.; gas and electric lighting; 900 feet of cement sidewalks; 12-foot covered porches on south and east sides; cost \$15,000; plans by Building Department of Dalworth county, J. E. Overbeck, supervising architect, 709 Wilson Bldg., Dallas, Tex. (Recently noted.)

Tex., Fort Worth.—Butler estate will re-

build Davis Hotel at 204 S. Boaz St.; Mrs. J. A. Ingram may be addressed. (Recently reported burned.)

Va., Rockymount.—Bedford Robertson will rebuild Rockymount Hotel reported burned at loss of \$12,000.

## MISCELLANEOUS

Ala., Flat Creek.—Hospital, etc.—Pratt Consolidated Coal Co., Birmingham, Ala., will build prison, hospital, bathhouse, etc., for convict workers in mine. (See "Coal Mines and Coke Ovens.")

D. C., Washington.—Parish Hall.—All Souls' Unitarian Church, 14th and L Sts. N. W., James A. Sample, chairman of trustees, 1406 New York Ave. N. W., plans to erect parish hall. (See "Churches.")

Ga., Americus.—Hospital.—Americus Hospital Association will erect hospital building; cost, including equipment, \$35,000 to \$50,000.

Ga., Atlanta.—Auditorium.—Atlanta's Greater Automobile Show, H. C. George, manager, will remodel interior of auditorium at cost of \$5000.

Ga., Atlanta.—Clubhouse.—Automobile Club of Georgia, George W. Hanson, president, will erect clubhouse.

Ga., Augusta.—Bellomy & Whaley, Augusta, are preparing plans for building.

La., New Orleans.—Hospital.—Charity Hospital of Louisiana, E. S. Lewis, vice-president, will let contract January 22 to erect addition to colored female ward; 25x135 feet; three stories; ordinary joist construction; brick walls; cost \$16,000; plans by Frombey & Drennan, New Orleans. (Recently noted to receive bids until January 22.)

La., Shreveport.—Natarium, etc.—Louisiana State Fair Association, Louis N. Bruegerhoff, secretary, will let contract about February 1 to erect natatorium; 500x400 feet; concrete; drill well to depth of 1200 to 1500 feet; erect bathhouses, etc.; cost \$12,000 to \$15,000. (Recently noted.)

Md., Baltimore.—Amusement.—John J. Carlin, 215 St. Paul St., will erect amusement building at North Ave. and 7th St.; two stories; brick.

Md., Baltimore.—Motordome.—Howard A. French, 304 W. Baltimore St., and Jack Prince, Los Angeles, Cal., will probably erect Motordome.

Mo., Kansas City.—Hospital.—J. W. Perry, president of trustees of Christian Church Hospital, is having plans prepared by H. C. Holt, Kansas City, for proposed hospital building.

S. C., Charleston.—Auditorium.—Proposals received by D. C. Barbot, architect, 26 Broad St., Charleston, until noon January 20 to erect auditorium at Faber place on Ashley River; plans, specifications, etc., furnished by architect; usual rights reserved. (Previously noted.)

S. C., Charleston.—Library.—Charleston Library Society will erect library building on King St. near Queen St.

S. C., Columbia.—Hospital.—Dr. Augustus B. Knowlton will soon receive bids to erect proposed addition to Knowlton Hospital; three stories and basement; brick; stone trimmings; 62x34 feet; electric lights and elevators; telephone system; hardwood, tile and cement floors; plans by J. H. Sams, Columbia.

Tenn., Memphis.—Clubhouse.—Catholic Club of Memphis is having plans prepared by Richard J. Regan, Memphis, for clubhouse; brick and stone; fireproof; probably five stories; construction to permit erection of additional stories later; lower floor for stores; cost about \$50,000. (Lately mentioned to be erected by Young Men's Institute.)

Tex., Bay City.—Clubhouse.—Matagorda Bay Hunting and Fishing Club, H. E. Walter, secretary, 1301 People's Gas Bldg., Chicago, Ill., owns 2000 acres of land on Matagorda Bay and Lake Austin, and will erect clubhouse and cottages; frame or cement; cottages to contain four rooms; fireplaces; cost \$5000 to \$7000. (Recently reported incorporated.)

Tex., Dallas.—Orphanage.—Juliette Fowler Home for Orphans, Fowler, Tex., will, it is reported, erect orphanage building to replace structure at Fowler.

Tex., Houston.—Turnverein.—Houston Turnverein Association is having plans prepared by Sanguinetti & Staats, Houston, for Turnverein building; three stories; 90x100 feet; Bedford stone or granite; roof garden; cost about \$10,000. (Previously noted.)

Tex., Houston.—Stock Exchange.—Union Stockyards Co. has plans by C. D. Hill & Co., Houston, for stock exchange building; cost \$60,000. (Further details recently noted under "Miscellaneous Enterprises.")

W. Va., Wheeling.—Clubhouse.—S. G. Smith,

secretary of University Club, states that club purchased no property nor accepted plans for clubhouse; still under consideration, and will probably not be decided before March 1. (Recently noted.)

W. Va., Warwood.—Carhouse.—Panhandle Traction Co., Wheeling, W. Va., will erect carhouse in North Warwood.

## RAILWAY STATIONS

Ky., Middlesboro.—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., and Southern Railway, B. Herman, chief engineer maintenance of way and structures, Washington, D. C., will construct passenger depot.

Mo., St. Louis.—Chicago, Rock Island & Pacific Railroad Co., J. B. Berry, chief engineer, Chicago, Ill., will expend, it is reported, \$1,000,000 for improvements to include erection of passenger station, elevation of tracks, etc.

Okl., Oklahoma City.—Chicago, Rock Island & Pacific Railway, J. B. Berry, chief engineer, Chicago, Ill., is reported as arranging to elevate tracks and erect passenger station at total approximate cost of \$1,000,000.

Va., Suffolk.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., is reported as considering erection of union station.

W. Va., Parkersburg.—Baltimore & Ohio Railroad, F. L. Stuart, chief engineer, Baltimore and Charles Sts., Baltimore, Md., will erect freight terminal; inbound freight-house, 25x250 feet; outbound freight-house, 35x425 feet; transfer platform, 11x800 feet; capacity 90 cars; total estimated cost \$207,350. (Recently noted.)

## SCHOOLS

Ala., Florence.—City will erect proposed public school at cost of \$125,000. Address The Mayor.

Ark., Fayetteville.—W. H. Cravens, secretary of trustees of University of Arkansas, will receive plans until noon January 22 for proposed Peabody Hall; brick and stone; cost \$35,000; plans to provide for heating apparatus, plumbing and sanitary ventilation; to contain 8500 square feet of floor space; semi-fireproof construction. (Recently noted.)

D. C., Washington.—District Commissioners have plans by Snowden Ashford and L. E. Dessez, District Bldg., Washington, for proposed manual-training school for negroes at O St. near N. Capitol St.; red brick; limestone trimmings; Elizabethan or Tudor style; basement equipped for laundry, drying-room, carpenter shop, etc.; steam heat; electric and gas lights; structure 180x130 feet; fireproof construction; cost \$160,000; bids opened about February 15. Address District Commissioners.

Fla., Tampa.—Hillsboro County School Board approved plans by A. L. Shaw, Tampa, for wing to Michigan Ave. school; two stories and basement; replica of east wing; seating capacity, 200.

Ga., Atlanta.—Georgia School of Technology purchased three-acre tract and will erect building for power and heating systems for college.

Ga., Columbus.—Secondary Industrial School is having tentative plans prepared for engineering and mechanical arts building.

Ga., Dublin.—Laurens County Commissioners postponed election to vote on \$50,000 bond issue to establish agricultural and mechanical school; F. G. Corker, J. R. Rivers and James L. Keen, Bond Commission. (Recently noted to have voted on this issue January 9.)

Ga., Young Harris.—North Georgia Conference, Methodist Episcopal Church South, will erect auditorium and recitation rooms at Young Harris College to replace burned building; probably 70x30 feet; character of construction, heating and lighting not determined; cost \$12,000 to \$16,000; architect not selected; M. J. Cofer, Atlanta, Ga., of J. A. Sharp of Young Harris, may be addressed. (Recently noted.)

La., New Orleans.—Tulane University Administrators selected James Gamble Rogers, 11 E. 24th St., New York, as architect for 12 buildings at H. Sophie Newcomb Memorial College. (Previously noted.)

Ky., Whitesburg.—Plans are being prepared for proposed high-school building. Address The Mayor.

La., Port Barre.—City voted tax to erect high school to cost \$7500. Address The Mayor.

La., Thibodaux.—Thibodaux school district votes January 11 on bond issue to erect school. Address District School Trustees.

Md., Baltimore.—Johns Hopkins University, Edward B. Mathews, secretary building committee, is having plans prepared by Parker, Thomas & Rice, Union Trust Bldg., Baltimore, for administration and academic building; two and three stories; brick, stone and granite with terra-cotta and marble trimmings; interior finished in hardwood and oak; cost \$750,000 for construction alone. (Recently noted.)

Miss., Biloxi.—City will issue \$50,000 of bonds for high-school building; W. K. M. Duke, president of School Board. (Recently noted.)

N. C., Durham.—Durham County Board of Education will receive bids to erect proposed school in West Durham; two stories and basement; 11 classrooms and assembly hall. (Previously noted.)

Ok., Smithfield.—Sayre & Baldwin, architects, Anderson, S. C., will have plans ready about February 15 for school to cost \$20,000 to \$25,000. (Previously noted.)

N. C., West Raleigh.—Bids to erect Young Men's Christian Association Building at Agricultural and Mechanical College were in excess of estimate, and Henry E. Bonitz, architect, Wilmington, N. C., has been directed to prepare new plans; H. E. Satterfield, chairman building committee. (Previously noted.)

Okl., Pond Creek.—Board of Education, M. D. Sullivan, clerk, will expend \$40,000 (not \$35,000, as recently stated) to erect school building; 86x116 feet; three stories; fireproof; bids received until January 15.

S. C., Dillon.—Sayre & Baldwin, architects, Anderson, S. C., will have plans ready for contractors about January 25 to erect school building to cost \$23,000. (Previously noted.)

Tenn., Chattanooga.—Board of Mission for Freedmen of Presbyterian Church, U. S. A., Pittsburgh, Pa., will erect and equip proposed Newton Normal and Industrial Institute for Negroes; Dr. E. A. Elmore, pastor of Second Presbyterian Church, Chattanooga, is interested.

Tenn., Hohenwald.—Lewis county voted \$10,000 bond issue for school improvements. Address County Commissioners.

Tex., Beaumont.—City will receive bids until noon January 15 to erect two-story-and-basement brick and concrete school; certified check for \$500 with building bids and for 2½ per cent. amount of bids with separate bids for plumbing, roofing, wiring and heating; plans and specifications at office of H. C. Mauer, architect, 1-2 Gordon Bldg., Beaumont, or may be had on deposit of \$25.

Tex., Brownwood.—Board of Trustees may be addressed relative to erecting dormitory at Howard-Payne College to cost \$40,000. (Texas Baptist Education Commission recently noted to erect building.)

Tex., Canadian.—Board of Trustees may be addressed relative to erecting dormitory at Baptist College. (Texas Baptist Education Commission recently noted to erect building.)

Tex., Dallas.—School Board is having plans prepared for four-room building in Fairland and for four-room addition to negro high school; cost \$20,000 and \$12,000, respectively; awarded contract at \$2183 to Kleniston Bros., Dallas, to install heating apparatus at James Bowie school.

Tex., Fort Worth.—Hebrew Institute Association, L. Shanblum, president, will erect proposed institute building to cost \$60,000.

Tex., Greenville.—Board of Trustees may be addressed relative to erecting dormitory at Burleson College to cost \$40,000. (Texas Baptist Education Commission recently noted to erect building.)

Tex., Harrisburg.—Harrisburg school district will erect addition to school; brick; steam heat; cost \$10,000; architect not selected; L. L. Pugh, superintendent, Houston, Tex., may be addressed. (Bond issue of \$10,000 recently reported voted.)

Tex., Houston.—City Controller Dan C. Smith, Jr., will receive bids until noon February 5 to erect Rusk school building; certified check for \$5000, payable to H. B. Rice, Mayor; plans and specifications, etc., on application to Cooke & Co., architects, 507-08-09 Theater Bldg., Houston; three stories; fireproof; auditorium 40x70 feet; Tudor style; cost about \$75,000. (Previously noted.)

Tex., Houston.—Oblate Fathers of San Antonio, Father Constantineau, representative, will erect school, church and priest's house.

Tex., Sherman.—City will erect two schools, one in Second and one in Fifth ward; cost \$20,000 each. Address The Mayor.

Tex., Shiner.—City voted \$15,000 bond issue to erect brick school. Address The Mayor.

Tex., Troy.—City voted \$20,000 bond issue to erect school. Address The Mayor.

Tex., Waco.—Sisters of St. Mary plan erection of convent school.



Va., Lynchburg.—W. W. Smith, president Randolph-Macon Woman's College, states that plans for college building to cost \$60,000 will not be begun for two years. (Previously noted.)

Va., Richmond.—C. P. Walford, clerk and supervisor of public schools, Room 402 City Hall, will receive bids until 6 P. M. January 22 to erect school on Grace St. between 23d and 24th Sts.; 150x195 feet; semi-fireproof construction; hot-air heat; electric lighting; concrete, stone; terra-cotta trimmings; Gothic architecture; cost \$100,000; bids received as follows: (1) For entire construction; (2) for heating and ventilating system; (3) for plumbing system; certified check for \$500 with building bids; for \$300 with bids for heating and ventilating system; plans, specifications and further particulars from Carneal & Johnson, architects, National Bank of Virginia Bldg., 9th and Main Sts., Richmond. (Recently noted.)

### STORES

Ala., Birmingham.—Roland L. Lide will erect two two-story frame buildings at S. Crescent Ave. and Vine St.; cost \$5500.

Ala., Birmingham.—S. H. Kress & Co., 386 Broadway, New York, will erect business building; cost \$50,000.

Ala., Birmingham.—G. E. Coffman will erect two buildings at North 17th St. and Fifteenth Ave.; two stories; frame; cost \$3900.

Ala., Fort Deposit.—J. E. Holmes will erect store building to be occupied by J. W. Rives.

D. C., Washington.—Howard Etchison, 1822 Columbia Rd. N. W., will erect two one-story stores at 2113-15 18th St. N. W.; cost \$4000.

Ga., Atlanta.—E. A. and T. J. Peeples will expend \$7000 for improvements to building at 12 E. Nash Ave.

Ga., Augusta.—Mrs. R. Sternberg has plans by G. Lloyd Preacher, Dyer Bldg., Augusta, for store building; three stories; 31x74 feet; brick; tin roof; cost \$12,000; will let contract in two weeks.

Ga., Berlin.—Valdosta-Moultrie Investment Co. will expend \$8000 to erect three one-story brick buildings; 25x90 feet each; fireproof construction. (Recently noted.)

Ga., Hartwell.—T. J. Linder will rebuild store; two stories; ordinary construction; heating not determined; electric lighting; cost \$10,000; architect not selected. (Recently reported burned.)

Ga., Winder.—Winder Banking Co. will erect store, bank and office building. (See "Banks and Offices.")

Ky., Middlesboro.—Weinstein Bros. will remodel second and third floors of building for offices and apartments. (See "Bank and Office.")

Ky., Middlesboro.—G. C. Cline will erect business building on Cumberland Ave.; two stories.

Ky., Middlesboro.—Robert Euster will erect business building; two stories; brick; 50x100 feet.

Miss., Meridian.—W. E. Hopper will erect store building at 7th St. and Twenty-fourth Ave.; pressed brick; two stories; foundation to support three additional stories; cost \$20,000.

Mo., St. Louis.—H. G. Spengler will, it is reported, erect business building at 611-13 S. 6th St.

N. C., Elizabeth City.—W. T. Love will probably erect business building on Poindexter St.

N. C., Wilmington.—C. W. Polvogt has plans by Grossman & Mahler, Wilmington, for store and apartment building (See "Apartment-houses.")

Okla., Oklahoma City.—Heferding Bros., 101 Harrison Ave., purchased site on Broadway and will erect business building.

S. C., Columbia.—F. L. Brown is reported to erect fireproof store, theater and apartment building. (See "Theaters.")

Tenn., Memphis.—C. W. Thompson will erect store and apartment-house at Ayers St. and Chelsea Ave.; cost \$7200.

Tenn., Memphis.—Lee Estate will erect business building at Monroe Ave. and 4th St.; one story; cost \$17,000.

Tenn., Memphis.—Catholic Club of Memphis is having plans prepared by Richard J. Regan, Memphis, for clubhouse and store building. (See "Miscellaneous Structures.")

Tenn., Middlesboro.—Euster Gensburg & Co. will erect business building; two stories; fireproof; 50x150 feet.

Tex., Beeville.—V. Kohler will erect three business buildings; brick construction.

Tex., Dallas.—J. Chase will erect business building; one story; cost \$5000.

Tex., Dallas.—Neil Grubb will erect business building at Swiss Ave. and Gordon St.; brick veneer; cost \$12,000.

Tex., Houston.—J. W. Metzler and Karl Treschwig (Houston Wholesale Confectionery Co.) are reported to erect business building on Louisiana St. between Preston and Congress Sts.; one story; brick; construction to permit erection of additional stories later.

Tex., Plainview.—R. P. Smyth awarded contract to McCrae Building Co., Plainview, to erect business building; two stories; brick; marble and plate-glass front on lower floor; cost \$8000.

Tex., Sherman.—Eugene Craycroft will erect business building on South Crockett St.; cost \$20,000.

Tex., Sherman.—Ed. Caraway will erect business block on South Travis St.; brick; cost \$15,000.

Va., Norfolk.—Nash estate has plans by Neff & Thompson, Norfolk, for store and warehouse. (See "Warehouses.")

W. Va., Charleston.—Payne & Melton will not at present erect business building recently reported; James M. Payne will expend \$10,000 to erect addition 50x50 feet to business building; ordinary construction; natural-gas radiators; gas and electric lighting; plans by James L. Montgomery, Charleston; construction by owner. (Recently noted.)

W. Va., Huntington.—Fred C. Prichard of Robson-Prichard will erect office building, probably to contain stores on lower floor.

### THEATERS

Fla., St. Petersburg.—George S. Gandy, proprietor of People's Theater, Philadelphia, Pa., is reported to erect theater.

Md., Baltimore.—Frederick W. Schanze, Pennsylvania and North Aves., is having plans prepared by Paul Emmart, 210 W. Fayette St., Baltimore, for theater at 2426 Pennsylvania Ave.; two stories; fireproof; reinforced concrete; steel frame; tile roof; galvanized-iron cornice; 40x140 feet. (Recently noted.)

Miss., Vicksburg.—Josiah Pearcy & Sons will make improvements to proposed moving-picture parlor; three stories; 25x100 feet; semi-fireproof construction; electric lighting; cost \$10,000; plans by M. J. Donovan, Vicksburg; bids opened January 2.

S. C., Columbia.—F. L. Brown, manager Columbia Theater, contemplates, it is reported, erection of theater, store and apartment building; concrete and fireproof construction; 120x73 feet; stage 40x38x65 feet; three stories, consisting of first floor, first balcony and gallery; steam heat; seating capacity 1400; two stores on ground floor; plans in progress; contract will be let during early spring; cost \$65,000.

Tenn., Bristol.—Anson King is reported to erect theater; seating capacity 1400; is having plans prepared by Clarence B. Kerfoot, Bristol, will also remodel Harmeling Theater, construct arcade, etc.

Tenn., Bristol.—Anson King is having plans prepared by C. B. Kerfoot, Bristol, for theater; 72x110 feet; ordinary or slow-burning construction; will begin building about March 1. (Previously noted.)

### WAREHOUSES

Ga., Atlanta.—F. J. Coledge & Sons will erect warehouse; reinforced concrete; cost \$50,000.

Ga., Jackson.—Mallet & Nutt will rebuild cotton warehouse; two buildings, 50x100 feet; mill construction; cost \$5000. (Recently reported burned.)

Md., Baltimore.—Ambrose Lavkaltis, 601 S. Paca St., is reported to erect four-story warehouse at Lombard and Penn Sts.

Md., Baltimore.—Terminal Warehouse Co., Guilford Ave. and Pleasant St., purchased site adjoining present structure and will, it is reported, enlarge warehouse.

Md., Sparrows Point.—Maryland Steel Co., Quincy Bent, assistant to president, contemplates rebuilding pattern storehouses; plans not definite. (Recently noted burned at loss of \$100,000.)

Mo., Kansas City.—J. I. Case Threshing Machine Co., Racine, Wis., plans to erect warehouse at Milwaukee Ave. and Broadway; fireproof; cost about \$50,000.

Mo., St. Louis.—John Deere Plow Co., Moline, Ill., will erect addition to building at Broadway & Clinton St.

S. C., Columbia.—Gibbes Machinery Co., 521 Gervais St., will rebuild structure reported burned.

S. C., Columbia.—Southern States Supply Co. is negotiating for site to erect building to replace structures reported burned.

Tex., Pecos.—Wells Fargo & Co., G. A. Taft, general superintendent, Southern department, Houston, Tex., has not decided on warehouse recently noted; considering erection of small frame depot office.

Va., Port Norfolk, P. O. Norfolk.—Planters' Manufacturing Co. will rebuild at once storage shed reported burned; 210x110 feet; material ordered.

Va., Norfolk.—Nash estate has plans by

Neff & Thompson, Norfolk, for store and warehouse building; five stories; reinforced concrete; front of face brick; terra-cotta trimmings; fireproof construction; will receive bids until January 16.

W. Va., Huntington.—Julius Broh will erect building on Fourth Ave. between 10th and 11th Sts.; fireproof; four stories; elevator system; to be occupied by Sears & Carter, wagon manufacturers, and as storage rooms by Union Storage Transfer Co.

## BUILDING CONTRACTS AWARDED

### ASSOCIATION AND FRATERNAL

Ky., Nicholasville.—Jessamine Lodge No. 103, Knights of Pythias, awarded contract to Nicholasville Lumber Co., Nicholasville, to erect temple at Mulberry and Depot Sts.; plans call for two-story brick structure, with lodge, smoking and reading rooms and kitchen.

Miss., Biloxi.—Benevolent Protective Order of Elks awarded contract to M. E. Dupree & Co., Mobile, Ala., to erect lodge building; cost about \$25,000; plans by Stone Bros., Mobile, Ala. (Recently noted.)

### BANK AND OFFICE

Ala., Anniston.—C. E. Thomas and S. Mahone awarded contract to erect store, hall and office building. (See "Stores.")

Ala., Autaugaville.—Citizens' Bank, L. D. Hicks, president, awarded contract to M. Dohring, Georgiana, Ala., to erect bank building.

Fla., Apopka.—Bank of Apopka awarded contract to T. W. Mathews, Orlando, Fla., to erect 30x40-foot bank building; stoves; gas lighting; plans by M. S. King, Orlando. (Recently noted.)

Fla., Jacksonville.—Charles R. Armstrong awarded contract to Joseph Speke, Jacksonville, to erect office and store building recently noted. (See "Stores.")

Md., Baltimore.—Savings Bank of Baltimore will expend \$20,500 to erect office building; 25x114 feet; fireproof construction; steam heat; plans by arker, Thomas & Rice, Union Trust Bldg., Baltimore; contract recently noted awarded to John Hiltz & Sons Company, 3 Clay St., Baltimore.

Miss., Jackson.—Watkins & Watkins awarded contract to D. A. Hicks, Jackson, to remodel building reported burned.

Tenn., Knoxville.—J. J. Ashe awarded contract to remodel two-story bank building. (See "Stores.")

Tex., Houston.—First National Bank of Houston will expend \$8000 to remodel bank at Main St. and Franklin Ave.; awarded contract to James Stewart Company, Houston; plans by Sanguinette, Staats & Barnes, Houston.

Va., Roanoke.—National Exchange Bank awarded contract to Thompson-Starrett Company, Pittsburgh, Pa., and New York, to erect bank building at Campbell Ave. and Jefferson St.; marble; granite base; 46 feet high; 50x100 feet; interior of marble and Caen stone; vestibule of Pavonazzo marble; marble banking screens; vaults; shower baths; cost about \$150,000; plans by Wyatt & Nolting, Keyser Bldg., Baltimore, Md. (Previously noted.)

### CHURCHES

Ala., Helena.—Central Lumber Co., Bessemer, Ala., has contract to erect church; A. C. Kiser in charge of work.

Ga., Fitzgerald.—First Baptist Church awarded contract to Smith Construction Co., Athens, Ga., to erect edifice; cost \$30,000; plans by Sayre & Baldwin, 405 Bleckley Bldg., Anderson, S. C. (Previously noted to open bids November 28.)

Tex., San Antonio.—Rev. R. O. Prat awarded contract to J. C. Dielmann, San Antonio, to erect proposed edifice; brick; electric lighting; cost \$25,000; plans by Leo M. J. Dielmann, San Antonio.

### CITY AND COUNTY

Ala., Gadsden.—Fire Station.—City awarded contract to erect proposed West Gadsden fire station; concrete; cost \$3000 to \$4000. Address The Mayor.

N. C., Durham.—Fire Station.—City awarded contract to H. L. Smith, Durham, to erect proposed fire station at E. Main St. and Peachtree Al.; frontage 32 feet, instead of 25 feet as originally planned. (Recently noted.)

### COURTHOUSES

Tenn., Chattanooga.—Hamilton County Courthouse Commission, Hamilton National Bank Bldg., awarded contract at \$312,195 to

George A. Fuller Company, Fuller Bldg., New York, to erect courthouse; Tennessee marble; "T" shape; six entrances; tiled corridors; steel shutters and doors; plans by R. H. Hunt and Barnwell & Jones, all of Chattanooga. (Recently noted.)

### DWELLINGS

Va., Staunton.—Luther Dickerson awarded contract to G. W. Fretwell, Staunton, to erect residence; frame; cost \$4500.

W. Va., Parkersburg.—Miss Emma Wells awarded contract to E. R. Klehl, Belpre, O., to erect residence; 10 rooms; cost \$3000.

### GOVERNMENT AND STATE

Tex., Georgetown.—Postoffice.—J. H. Robertson of Austin, Tex., awarded contract to Mark Langford Co., Georgetown, to erect four store buildings, one to be occupied by postoffice. (See "Stores.")

### MISCELLANEOUS

Ala., Anniston.—Hall.—C. E. Thomas and S. Mahone awarded contract to erect store, hall and office building. (See "Stores.")

Ala., Birmingham.—Chamber of Commerce. Chamber of Commerce Construction Co. awarded contract to Realty Construction Co., Birmingham, to repair chamber of commerce building; cost about \$5000. (Recently reported burned.)

Md., Baltimore.—Sheds.—American Ice Co., 309 Calvert Bldg., awarded contract to John K. McIver, 7 Clay St., Baltimore, to erect two sheds on Franklin St. near Smallwood; frame; cost about \$6000.

Miss., Jackson.—Home.—Old Ladies' Home awarded contract to J. F. Barnes, Jackson, Miss., to erect building previously noted; two stories; 30 rooms; ordinary construction; slate roof; steam heat; cost \$10,000; plans by H. N. Austin, Jackson. (See "Machinery Wanted.")

Tenn., Memphis.—Clubhouse.—Memphis Building Co., L. M. Westers, president; J. P. O'Leary, vice-president; L. G. Van Ness, secretary-treasurer, awarded contract at \$248,000 to Jefferson Construction Co., New Orleans, La., to erect clubhouse for Memphis Athletic Club. (Lately noted.)

### RAILWAY STATIONS

Ga., Vidalia.—Georgia & Florida Railway Co., W. A. Swallow, chief engineer, Augusta, Ga.; Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., and Macon, Dublin & Savannah Railroad, J. T. Wright, general manager, Macon, Ga., awarded contract to erect union station; cost about \$15,000; plans by G. Lloyd Preacher, Augusta, Ga. (Previously noted.)

S. C., Anderson.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Goode Construction Co., Charlotte, N. C., to erect depot; cost \$20,000. (See S. C., Greenville.)

S. C., Belton.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Williams-Moffatt Construction Co., Durham, N. C., to erect \$8000 depot. (See S. C., Greenville.)

S. C., Donalds.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Williams-Moffatt Construction Co., Durham, N. C., to erect \$8000 depot. (See S. C., Greenville.)

S. C., Greenville.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Goode Construction Co., Charlotte, N. C., to erect depots at Greenville (recently noted) and Anderson, S. C., to cost about \$20,000 each, and to Williams-Moffatt Construction Co., Durham, N. C., to erect depots at Piedmont, Pelzer, Hodges, Donalds, Honea Path and Belton, S. C., to cost \$8000 each; construction to be completed on all by April 1.

S. C., Hodges.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Williams-Moffatt Construction Co., Durham, N. C., to erect depot; cost \$8000. (See S. C., Greenville.)

S. C., Hopewell.—Greenville, Spartanburg & Anderson Railway Co. awarded con-



tract to Williams-Moffatt Construction Co., Durham, N. C., to erect depot; cost \$8000. (See S. C., Greenville.)

S. C., Pelzer.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Williams-Moffatt Construction Co., Durham, N. C., to erect depot; cost \$8000. (See S. C., Greenville.)

S. C., Piedmont.—Greenville, Spartanburg & Anderson Railway Co. awarded contract to Williams-Moffatt Construction Co., Durham, N. C., to erect \$8000 depot. (See S. C., Greenville.)

Tex., Dallas.—Missouri, Kansas & Texas Railway system, S. B. Fisher, chief engineer, St. Louis, Mo., and Texas & Pacific Railway, B. S. Wathen, chief engineer, Dallas, Tex., awarded contract to James J. Maloney, Dallas, Tex., to erect union passenger station; concrete foundation; concrete floor; wood construction.

### SCHOOLS

Ala., Florida.—Directors of Florida Educational Corporation awarded contract to L. E. Marley, Ozark, Ala., to erect school for Florida City School; two stories and basement; brick.

La., Vidalia.—Concordia Parish School Board awarded contract at \$10,655 to Paine & Jones, Fort Smith, Ark., to erect school; plans by Stevens & Nelson, 1109 Hennen Bldg., New Orleans, La. (Recently noted.)

Md., Baltimore.—St. Mary's Industrial School, Wilkens and Caton Aves., awarded contract to J. J. O'Connor, 427 E. Lexington St., Baltimore, to erect tower; stone; terra-cotta trimmings; main portion four stories; plans by Robert C. Ulrich, 72 Gunther Bldg., Baltimore.

S. C., Williston.—City awarded contract to Winder Lumber Co., Winder, Ga., to erect school building; contract for heating awarded to American Machine & Manufacturing Co., Charlotte, N. C.; cost \$12,000. (Previously noted.)

Tex., Waco.—City awarded contract at \$31,200 to J. S. Harrison, Waco, to erect school in East Waco; two stories and basement; brick; plans by Scott, Pearson & Denn, Waco. (Recently noted.)

### STORES

Ala., Anniston.—C. E. Thomas and S. Mahone awarded contract to erect business building; two stories; lower floor for store; upper floor for offices and hall.

Ala., Birmingham.—Frank B. Fowlkes and Richard W. Massey awarded contract to J. L. Burns, Birmingham, to erect store building on Fourth Ave. between 20th and 21st Sts., to be occupied by Oster Bros.; brick and steel; facade of pressed brick with solid plate-glass fronts; four stories and basement; cost \$30,000; plans by William C. Weston, Birmingham.

Fla., Jacksonville.—Charles R. Armstrong awarded contract to Joseph Speke, Jacksonville, to erect store and office building; 60x60 feet; brick and stone; electric lighting; tile walks 12 feet wide; cost \$10,000; plans by W. B. Camp, Board of Trade Bldg., Jacksonville. (Recently noted.)

Fla., St. Petersburg.—H. R. Binnie awarded contract to Allen & Du Bois, St. Petersburg, to erect garage and office building; brick; two stories; plans by Bonniwell & Son, St. Petersburg. (Lately noted.)

Fla., Tampa.—Eugene Holtsinger awarded contract to C. F. Anlick, Tampa, to erect proposed business building on Seventh Ave.; three stories; 55x116 feet; plans by Bonfoy & Elliott, Tampa.

Ga., Atlanta.—Milon Bros. will erect business building at 40 Luckie St.; brick and stone; 40x100 feet; two stories; foundation to support six or eight additional stories; ordinary construction; mosaic and glass sidewalk; cost \$15,000; plans by A. Ten Eyck Brown, Atlanta, Ga.; contract awarded to William H. George.

Ga., Albany.—F. F. Putney and E. E. Wetherble awarded contract to A. E. Ittner, Albany, to erect five stores; 23x60 feet each; one story and basement; basement to have cement walls; balance of building brick; stores; electric lighting; cost \$13,000; plans by M. J. Reidy, Albany. (Recently noted.)

La., Welsh.—J. I. Byerly awarded contract to Train & Henton, Lake Charles, La., to erect business building; 64x40 feet; brick; cost \$1400; plans by E. W. Phillips, Lake Charles, La.

Md., Baltimore.—M. M. Jules awarded contract to S. Cramer to erect store and dwelling at 1453-55 Light St.; three stories; brick; 24x78 feet; plans by John Freund, Jr., 210 E. Lexington St., Baltimore.

Mo., Kansas City.—H. M. Evans has plans by Smith, Rea & Lovitt, Kansas City, for

business building at 1113-15 Walnut St.; five stories; 50x110 feet; faced with terra-cotta; first story to have plate-glass front; cost \$75,000; E. H. Bradbury, Kansas City, has contract and has begun excavation.

Tenn., Knoxville.—J. J. Ashe awarded contract to Brimer & England Bros., Knoxville, to remodel bank building; two stories; stores and barber shop in basement; steam heat; gas and electric lighting; cost \$6000; plans by Baumann Bros., Knoxville. (Recently noted.)

Tex., Dallas.—Clarence E. Linz awarded contract to Trinity Engineering & Construction Co., Dallas, to erect store building at Harwood & Bryan Sts.; two stories; brick; cost \$8000; plans by Lang & Witchell, Dallas.

Tex., Georgetown.—J. H. Robertson of Austin, Tex., awarded contract to Mark Langford Company, Georgetown, to erect four brick store buildings, one to be occupied as postoffice; cost \$12,000 to \$15,000. (Recently noted.)

Tex., Houston.—Levy Bros. awarded contract to Jesse H. Jones Construction Co., Houston, to erect store building and repair adjoining building; three stories; reinforced concrete and brick; cost \$40,000.

Va., Fredericksburg.—E. G. Hefflin, Fredericksburg, has contract to erect building at Commerce and Main Sts.; other contracts awarded are: Geo. W. Hefflin, for plumb-

ing; Montague & Co., for gas fixtures, and A. R. Bauman, for electric wiring; total cost \$6500; plans by Phillip N. Stern, Fredericksburg.

### THEATERS

Va., Phoebus.—A. M. Johnson will expend \$8000 to erect moving-picture theater to replace burned structure; 34x110 feet; fire-proof; brick and concrete; hot-water heat; electric lighting; plans by Mr. Johnson; contract awarded to L. M. Mears, Hampton, Va., for brick and concrete work only. (Recently noted.)

### WAREHOUSES

Ga., Douglas.—J. C. Brewer awarded contract to Empire Construction Co., Douglas, to erect proposed warehouse; 100x70 feet; cost \$5000.

Md., Baltimore.—James Robertson Manufacturing Co., 106-8 Hopkins Pl., awarded contract to J. Henry Miller, Inc., 106 Dover St., Baltimore, to erect warehouse at Howard and Henrietta Sts.; one story; brick; 28x87 feet; slag roof.

Tex., Dallas.—Southern School Book Depository awarded contract to Standard Construction Co., Dallas, to erect structure in which to store school books and supplies; two stories; reinforced concrete; cost \$18,000; plans by Lang & Witchell, Dallas.

## RAILROAD CONSTRUCTION

### RAILWAYS

Ala., Montgomery.—The Horne Alabama Railway & Manufacturing Co. has filed incorporation articles with authorized capital of \$30,000; headquarters at Montgomery, Ala.; Julius A. Horne of Milledgeville, Ga., president; H. Taylor of Montgomery, Ala., vice-president, and Henry Horne of Macon, Ga., secretary and treasurer, the latter owning 73 shares and the others one share each of stock. The exact field of operations is not stated.

Ark., Crossett.—The Crossett Railway, owned by the Crossett Lumber Co., is reported contemplating an extension from Lacey to Monticello, Ark., 16 miles. E. W. Gates is vice-president and general manager at Crossett, Ark.

Ark., Helena.—A. Maas of Memphis, Tenn., and Eastern capitalists are reported planning a tramway to connect with the St. Louis, Iron Mountain & Southern Railroad near Celwood.

Fla., DeLand.—The Dupont Railway & Land Co., says a report, will convert its railway on the S. V. White tract in this county (Volusia) to standard gauge and will extend it to Seville. Capt. A. B. Dunning of De Land, Fla., is chief engineer.

Ga., Gainesville.—Burke & Joseph of Cape Girardeau, Mo., general contractors for the Gainesville & Northwestern Railway, are reported to have let subcontracts to Arnold Wyatt, A. L. Gordon and others. The firm has local headquarters at Gainesville, Ga.

Ga., Letford.—An officer of the Savannah & Southern Railway is quoted as saying that it is surveying for an extension from Spurs to Clyde, six miles. W. G. Tuten is president and general manager at Letford, Ga.

Ga., Macon.—The Macon & Atlanta Construction Co. has been chartered in New Jersey to build railways, terminals, etc.; capital \$125,000; incorporators, Wm. Tusch, 103 Orange St., Cranford, N. J.; Harry N. Davis, 321 High St., Newark, N. J., and Paul A. Shipman, 2110 82d St., Brooklyn, N. Y.

Ky., Athol.—The Louisville & Nashville Railroad is reported surveying for a branch of the Lexington & Eastern division from Athol along the Middle Fork of the Kentucky River south to Hyden, Ky., the county-seat of Leslie county, about 40 miles, and perhaps beyond. J. E. Willoughby is chief engineer of construction at Louisville, Ky.

Ky., Paris.—The Louisville & Nashville Railroad, it is reported, will build second track from Paris to Winchester, Ky., 17 miles; also an extension from Winchester to coal fields. J. E. Willoughby is chief engineer of construction at Louisville, Ky.

La., Eunice.—The Rock Island System is reported considering plans to extend east from Eunice to finally enter New Orleans. J. B. Berry, Chicago, is chief engineer.

La., New Iberia.—The directors of the Southwestern Traction & Power Co. are reported to have authorized President F. W. Crosby of New Iberia to proceed with construction, and he is quoted saying that the first work will be between New Iberia and Jeanerette, La., from \$250,000 to \$300,000 being spent for the first link in the line.

La., New Orleans.—The Louisville & Nash-

ville Railroad, it is reported, will build a detour line about 75 miles long between Bay St. Louis and New Orleans in order to avoid lowlands where washouts occur in rainy seasons. J. E. Willoughby, Louisville, Ky., is engineer of construction.

Md., Baltimore.—The Maryland Public Service Commission has approved the Western Maryland Railway's issue of \$10,000,000 of 3½-year 5 per cent. notes, and the company will begin the proposed improvements at Hagerstown and Cumberland, Md., including new yards, etc., as soon as possible. Detour line is also to be built at various points between Baltimore, Hagerstown and Cumberland. H. R. Pratt is chief engineer at Baltimore. It is understood that 15 miles of continuous second track will be built between Williamsport and Hancock, Md., besides several passing tracks between Hancock and Cumberland.

Miss., Gulfport.—E. McL. Long of New York is reported engaged to make survey for the proposed Gulf & Western Railway from Gulfport, Miss., to Covington, La., about 60 miles. J. N. Dantzier and others are interested. W. H. Hardy is president at Gulfport.

Mo., Rolla.—Gilbert Lay, St. Clair, Mo., president of the Missouri, Arkansas & Gulf Railway, says that bids for construction will be received at any time. Proposed line is from Rolla to Bakerville, Mo., about 125 miles, via Lecom, Victor, Lenox, Licking, Raymondsville and several other towns. Three wooden bridges will be required near Rolla; 150 feet, 120 feet and 100 feet, respectively. C. E. Comstock is vice-president, E. E. Young general manager, F. W. Webb treasurer and W. E. Fink secretary.

Mo., St. Louis.—The St. Louis County Belt Railroad Co. is reported promoted by James D. Houseman of St. Louis to build a line about 65 miles long and connecting with 24 railroads. Franchise is secured and surveys made. A new bridge over the Mississippi River is proposed.

N. C., Elkin.—The Elkin & Alleghany Railway has been authorized by its stockholders and directors to issue bonds for \$12,000 per mile of line, and will, it is announced, proceed with construction. Road is now operating from Elkin to Thurmond, 13 miles, and bonds are reported sold to cover line to Sparta, N. C., a total of about 30 miles. H. G. Chatham of Winston-Salem is president and John A. Mills of Raleigh general manager. Other directors are R. A. Doughton of Sparta; R. M. Chatham, G. T. Roth, J. F. Hendren, Dr. J. W. Ring, J. S. Atkinson, Alex. Chatham, Jr., and C. W. Smith of Elkin; H. E. Fries and Frank Alsbaugh of Winston-Salem, N. C.

N. C., Statesville.—The Statesville Air Line Railway Co. is grading between Statesville and Mount Airy, N. C., about 60 miles, and about eight miles are graded.

N. C., Wilmington.—Official announcement is reported that the Atlantic Coast Line has prepared plans and will soon award contract for passenger station, etc., at Wilmington, its headquarters. E. B. Pleasants is chief engineer.

Okla., Miami.—The Quapaw & Lincolnville Railroad proposes to build two miles from Quapaw to Lincolnville, Okla., before March

1. Route level. J. D. McIntyre is vice-president and secretary at Miami, Okla. Two miles of track materials (rails at least 60 pounds) are wanted. Other incorporators are J. L. McCracken, president and treasurer; George J. Stein, chief engineer; M. H. McCracken and Ned R. McCracken.

Okla., Oklahoma City.—John W. Shartell, vice-president and general manager of the Oklahoma Railway, is reported saying that arrangements have been made to finance the projected Oklahoma Northwestern Railway from Oklahoma City to Woodward, Okla., about 130 miles, and that capitalists are ready to proceed with the plans if sufficient local aid in terminals, right of way, etc., is granted. Charter was obtained last summer. E. A. Wagener and others were the incorporators. The Santa Fe System is supposed to be interested.

Okla., Oklahoma City.—H. Leone Miller of Salina, Kan., is reported saying that a corps of engineers are surveying for the proposed Winnipeg, Salina & Gulf Railway, which is to extend from Winnipeg, Manitoba, to the Gulf of Mexico via Oklahoma City, and construction is to start in the spring.

Okla., Oklahoma City.—W. M. Whittenton, district manager for the Rock Island Lines, is quoted as saying that plans have been prepared for the building of a new passenger station, elevation of tracks and other improvements in Oklahoma City; estimated cost \$1,000,000; expected that construction will begin soon. J. B. Berry, Chicago, Ill., is chief engineer.

Tenn., Knoxville.—The Leighton-Ambrose Construction Co. has applied for charter to build a railroad soon; capital \$25,000. W. S. Ambrose says it is a construction company to handle shovel work.

Tenn., Memphis.—The Illinois Central Railroad, it is reported, will begin construction of its proposed new union station on the site of the present one immediately after the opening of the other union station on Calhoun Ave., which is expected to take place next month. A. S. Baldwin, Chicago, Ill., is chief engineer.

Tenn., Nashville.—The Louisville & Nashville Railroad is reported to have let contract to Walton, McDowell & Co. for a portion of the double-track work in Tennessee. It will require handling about 800,000 cubic yards of material, and expenditures under it are estimated at \$750,000. Total cost of the road's improvements in Tennessee is also estimated at about \$8,000,000. Firm includes J. E. McDowell of Knoxville, Tenn.; J. E. Rhodes of Franklin, Tenn., and S. Walton and E. B. Rawn of Falls Mills, Va. Other contracts expected to be let soon. J. E. Willoughby, Louisville, Ky., is chief engineer of construction. J. B. Smith & Co. of Knoxville, Tenn., are also reported to have a contract for concrete and structural work on 19½ miles south from Nashville.

Tenn., Nashville.—The Walton-McDowell Company, which has just been awarded a 12-mile contract on the proposed new double-track line of the L. & N. from a point above Nashville to Athens, Ala., has filed charter with \$50,000 capitalization. Incorporators, Samuel Walton, E. V. Rawn, J. R. McDowell, J. E. Rhodes and M. P. Estes.

Tenn., Tresswell.—The Chicago, Tennessee, & Gulf Railroad Co. is reported being organized to build a line from a connection at Fox Bluff with the Tennessee Central Railroad south via Tresswell to Sheffield, Ala. W. M. Shipman is vice-president. Surveys costing \$30,000 are said to have been made.

Tex., Austin.—The International & Great Northern Railroad, says a report, will extend the Austin Dam & Suburban Railway. O. H. Crittenden is chief engineer at Houston, Tex.

Tex., Dallas.—The Dallas Southern Traction Co., which is building from Dallas to Waxahachie, Tex., 22 miles, has been granted a franchise for entrance to Dallas and connection with the Northern Texas Traction Co.'s lines. It has also filed mortgage to secure \$2,000,000 of 5 per cent. 30-year bonds to cover construction. Edward T. Moore of Dallas, Tex., represents Stone & Webster of Boston, who are back of the road.

Tex., Florence.—The Bartlett & Western Railroad is reported to have completed its line and operated its first train into Florence.

Tex., Galveston.—The various railroads interested are reported conferring relative to the proposed new union station in Galveston to be erected in connection with the Santa Fe's general office building. F. Merritt, Galveston, Tex., is chief engineer of the local Santa Fe lines.

Tex., Paducah.—Sam Lazarus, president of the Quapaw, Acme & Pacific Railway, is quoted saying that surveys are being made



for an extension of 50 miles out of Paducah toward El Paso. C. E. Ensminger is vice-president and general manager and A. F. Sommer engineer, both at Quanah, Tex.

Tex., Pecos.—With reference to the report that the Pecos Valley Southern Railway Co. would build an extension to Fort Davis, L. W. Anderson, general manager and chief engineer, says that it is planned to build from Toyahvale, the southern terminus at present, to either Marfa or Alpine, on the Southern Pacific Railway, but there is nothing definite as to when work will start. Distance is 55 to 65 miles, and 25 miles of it through the Davis Mountains would be very heavy construction, but the rest light.

Tex., Riviera.—It appears that the railroad proposed by Theodore F. Koch from Riviera to Riviera Beach, on Baffin's Bay, will be 10 miles long and will be operated with motor cars.

Tex., San Antonio.—Concerning the San Antonio, Rockport & Mexican Railway, proposed by A. L. Matlock and others of San Antonio, it is further stated that Sir Frank Crisp of Ashurst, Morris, Crisp & Co., solicitors, London, England, announces that Robert Pattison of W. Pattison & Sons, contractors, of London and Liverpool, is associated with the promoters of the line, and is in position to finance the project through their business connections. Edward Cowper-Thwaite, engineer, of London, is in San Antonio in reference to the matter.

Tex., San Antonio.—The Southern Pacific contemplates building an industrial track from its yard to the Government reservation at Fort Sam Houston. There is no enlargement of terminals proposed. This denies a late report. E. B. Cushing is engineer of construction at Houston, Tex.

Va., Big Stone Gap.—The Big Stone Gap & Powell's Valley Railway, five miles long, is reported bought by L. O. Pettit, engineer of the company, at commissioner's sale. Possibly improvements will be made.

Va., Blacksburg.—Sale of the Virginia Anthracite Railway to the Norfolk & Western Railway is reported confirmed by the court at Richmond. Improvements may be made. C. S. Churchill is chief engineer at Roanoke, Va.

Va., Lynchburg.—Charter has been granted to the Lynchburg, Danville & Carolina Railway Co. to build a line about 125 miles long from a point on the Chesapeake & Ohio Railway near Danville, Va., to a point near Milton, on the North Carolina boundary. T. O. Troy of Amherst, Va., who built the Virginia Air Line, that is now operated by the Chesapeake & Ohio, is president and one of the incorporators of the new road. Other directors are W. P. Read, secretary; J. E. Bowman, Edward Meeks and L. B. Davies, all of Amherst, Va.; A. B. Carrington, W. R. Fitzgerald and R. A. James, all of Danville, Va. Headquarters at Amherst. Survey is reported made from the Chesapeake & Ohio Railway to Danville. The line may be extended into North Carolina, possibly to Burlington, Durham and Greensboro.

W. Va., Beckley.—R. B. Burks, acting chief engineer of construction, Chesapeake & Ohio Railway, denies the press report that he would build an extension from Jenny's Gap to Oceana, W. Va.

Va., Richmond.—The Richmond, Urbana & Peninsular Railway Co., which proposes to purchase the Seven Pines line of the Virginia Railway & Power Co. and build from Seven Pines to the Pamunkey River, about 15 miles, has obtained amendments to its charter permitting it to do further construction thus: West Point to Urbana, Va., about 16 miles; branch from the latter to Mathews Court House or points on Chesapeake or Mob Jack bays; about 20 miles; Saluda to some point on the Chesapeake Bay between the Rappahannock and the Plank-tank rivers, about 20 miles; from a point on the West Point-Urbana line to Richmond, Va., about 50 miles; also a line similar to the last described, excepting a divergence in route, 55 miles; stockholders include John C. Robertson, Clyde W. Saunders, Christopher Manning, Henry Eichelberger and W. A. Grenshaw of Richmond.

W. Va., Romney.—The recent report that the Hampshire Southern Railroad has been sold to the B. & O. is denied officially. There is no extension proposed at present.

W. Va., Rowlesburg.—The Baltimore & Ohio Railroad, it is reported, will build a branch to Beaver Hole, on Cheat River, to transport materials for the construction of the proposed dam there. F. L. Stuart is chief engineer at Baltimore, Md.

## STREET RAILWAYS

Ga., Macon.—The Macon Railway & Light Co., according to a local report, proposes to

spend about \$220,000 for improvements during 1912, including double track, heavier rail, etc. J. T. Nyhan is general manager.

Ga., Waycross.—Construction is reported begun upon the Waycross Street & Suburban Railway promoted by George W. Deen, president, and others. The company proposes to spend about \$250,000.

Ky., Louisville.—The Henry Bickel Company, contractor, is reported to have begun work on an extension of the 6th St. line of the Louisville Railway.

S. C., Greenville.—The Greenville Traction

Co., says a report, will begin work this month on the belt line to be built through the Mills Duncan and Westervelt mill villages.

Tex., Brownsville.—Construction is reported begun under the street-railway franchise granted recently to Sam A. Robertson of San Benito, Tex. There must be three miles built within a year.

Va., Richmond.—The Richmond & Henrico Railway has been granted permission to extend its line from Fulton to the National Cemetery.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

**Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.**

**Air Compressor.**—Brush Creek Mining & Manufacturing Co., R. L. Wheeler, Warren, Ky., will install (about March 1) compressors.

**Artists' Supplies.**—W. C. Smith, Jefferson, Ga., wants addresses of wholesale dealers in artists' supplies.

**Bank Fixtures.**—Farmers and Merchants' Bank, Berlin, Ga., wants prices on bank fixtures.

**Box Machinery.**—D. J. Farlie, 115 Main St., Streator, Ill., wants addresses of manufacturers of cigar-box machinery.

**Brick.**—Burkes Bros. & Fleming, Hattiesburg, Miss., want prices (f. o. b. Waynesboro, Miss.) on good rough brick.

**Bridge Construction.**—See "Paving, etc."

**Broom Equipment.**—Herbert E. Gyles, care Gunter & Gyles, Aiken, S. C., wants information on manufacture of brooms and prices on equipment for factory.

**Bridges.**—See "Railroad Equipment, etc."

**Building Materials.**—James L. Autry, 2114 Milam St., Houston, Tex., wants information and prices on building materials for two-story, basement and attic residence to cost \$20,000; hardwood interior in part.

**Building Materials, etc.**—George F. Sansbury, Cumberland, Md., wants estimates from manufacturers and material men on building materials, etc., for postoffice at Cumberland, Md.

**Building Plans.**—N. B. Coogan, Tryon, N. C., wants literature, etc., pertaining to erection of bungalows.

**Bulkhead Construction.**—Commissioners Orleans Levee District, Jules C. Koenig, president, 201 New Orleans Court Bldg., New Orleans, La., receive bids until 8 P. M. January 18 for construction of pile bulkhead about 1450 feet long on east bank of Mississippi River between St. Maurice Ave. and St. Bernard parish line, third district; full information can be obtained at office of board.

**Cigar-box Lumber.**—D. J. Farlie, 115 Main St., Streator, Ill., wants addresses of manufacturers of cigar-box lumber.

**Canal Construction.**—Proposals for construction of drainage canals in Mosely Creek Drainage District received by Drainage Commissioners at Dover, N. C., until noon February 16, and then opened; length of canals 14 miles, and yardage to be excavated 415,000; usual rights reserved; plans and specifications and blank forms of proposals furnished upon application, and full set of plans may be seen at office of Drainage Commissioners or at office of R. R. Eagle, engineer, Newbern, N. C.; G. V. Richardson, chairman of Board of Commissioners.

**Concrete-block Plant.**—James P. Lewis, care Union Bank, Whitesburg, Ky., wants new or second-hand concrete-block plant; hand power.

**Cast-iron Wheels, etc.**—Proposals received at Office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until January 24 for furnishing cast-iron car wheels, copper wire, hose and long-leaf yellow pine car lumber; blanks and general information relating to circular No. 671 obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and 1066 North Point St., San Francisco; also from U. S. Engineer offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club,

Kansas City; Chamber of Commerce, Quincy, and Commercial Club, Tacoma. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**Castings, etc.**—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 16, and opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., quantity of naval supplies as follows: Schedule 4209, steel castings, recoil springs, recoil cylinder liners, recoil cylinders, etc.; schedule 4210, tool steel, emery wheels; schedule 4216, carbon and high-speed steel drills, reamers, saws, hinges, etc., handles; schedule 4217, ash, white pine, ingot copper. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to bureau. T. J. Cowie, Paymaster-General, U. S. N.

**Concrete Lock.**—Proposals received by Trustees of Internal Improvement Fund of Florida, Tallahassee, Fla., until 10 A. M. February 1 for building concrete lock in Miami Drainage Canal, about four miles from Miami; drawings and specifications can be obtained from office of chief engineer, Tallahassee, on payment of \$2; each proposal accompanied by certified check, payable to W. V. Knott, State Treasurer, for \$500; proposals addressed to Albert W. Gilchrist, Governor and chairman Trustees Internal Improvement Fund; usual rights reserved; J. O. Wright, chief drainage engineer; J. C. Luning, secretary.

**Concrete Mixer.**—J. J. Ivey, Gunterville, Ala., wants prices on new or second-hand power concrete mixer, one-quarter cubic yard capacity; state prices and terms in first letter.

**Concrete Molds.**—J. L. Meyer, proprietor of Crown Bottling Works, Palestine, Tex., will purchase molds to make concrete ornaments, such as flower vases, etc.

**Crane.**—Blue Pearl Granite Co., Winston-Salem, N. C., wants second-hand electric traveling crane for immediate delivery.

**Crane.**—Mississippi River Commission, First and Second Districts, U. S. Engineer Office, Memphis, Tenn., January 3, 1912. Sealed proposals for furnishing locomotive crane received at this office until 12 noon February 8, then publicly opened. Information on application. Clarke S. Smith, Major, Engineers.

**Crayon Machinery.**—Fort Mountain Talc Co. of Georgia, Clark H. Abbott, manager, 29 Broadway, New York, wants prices on outfit for crayons.

**Drainage.**—Valley Drainage District, Shelby county, Clarence, Mo., will let contract to drain and improve 5000 acres of land; Edward Roy, Hagers Grove, Mo., secretary.

**Dredge Bucket.**—W. C. Wright, Box 195, Tulsa, Okla., wants second-hand clamshell bucket; one yard or one and one-quarter yards capacity.

**Electric-light Plant and Water-works.**—Sealed proposals received by Boyce Ficklen, Jr., City Clerk, Washington, Ga., until noon January 22 (extended date) for constructing power plant, adding to present water-works and overhauling and extending electric-light and power-transmission system, in accordance with plans and specifications drawn by Westinghouse, Church, Kerr & Co., engineers, New York, and on file in office of clerk; copies of plans, etc., obtainable from clerk upon deposit of \$50; amount refunded upon return; specifications divided into two parts, main and supplementary; bids as follows: A. Furnish material and construc-

tion; this bid divided into two parts, one to cover main specifications and other supplementary specifications. B. Construction of building and foundations, but not to include machinery or construction of transmission lines. C. Installation of machinery and construction of transmission lines, but not to include construction of building and foundations for machinery; this bid shall have separate bids called for under main and supplementary part of specifications; certified check for 5 per cent. of amount of bid; bonds in recognized company and approved by engineers.

**Electrical Machinery.**—Blue Pearl Granite Co., Winston-Salem, N. C., wants 20 and 40-horse-power dynamos; immediate delivery. (See "Crane.")

**Electrical Machinery.**—Brush Creek Mining & Manufacturing Co., R. L. Wheeler, general manager, Warren, Ky., will install (about March 1) motors.

**Elevator.**—Hickory Chair Manufacturing Co., Hickory, N. C., wants second-hand belt power freight elevator.

**Electrical Machinery.**—Beeville Manufacturing Co., Beeville, Tex., will open bids February 1 to install 120 alternating-current generator, 2300 volt, 60 cycle.

**Electrical Machinery.**—See "Wood-working Machinery, etc."

**Farming Implements.**—M. S. Palmer, Iatan, Tex., wants prices from manufacturers of disc plows and implements.

**Elevator.**—Dr. J. C. Johnston, All Saints Hospital, McAlester, Okla., wants prices on passenger elevator.

**Elevator.**—Treasury Department, Office of Supervising Architect, James Knox Taylor, Washington, D. C. Proposals received until 3 P. M. January 24, and then opened, for electric passenger elevator in United States postoffice and courthouse at Ottumwa, Iowa, in accordance with drawings and specifications, copies of which may be had at this office at discretion of architect.

**Engine.**—San Benito Cotton Gin Co., Box 256, Houston, Tex., will purchase Corliss or four-valve engine, about 300 horse-power, with 125 pounds steam pressure.

**Engine.**—Century Knitting Mills, South Boston, Va., wants second-hand 10 to 20-horse-power automatic or slide-valve engine for operating dyerom.

**Extracting Machinery.**—W. V. Smiley, Room No. 1, Staunton, Va., wants to correspond with manufacturers of machinery for extract plants.

**Fencing.**—E. J. Carter, Kilmarnock, Va., wants prices on several hundred feet iron fencing for cemetery; second-hand preferred.

**Gas Engines.**—See "Water-works Materials."

**Gasoline Engines.**—M. S. Palmer, Iatan, Tex., wants prices on 10 to 20-horse-power gasoline engines adapted to manufacture of tractors, motor trucks, etc.

**Grading.**—Office Commissioners District of Columbia, Washington, D. C. Bids received until 2 P. M. January 15 for grading about 9000 cubic yards on Massachusetts Ave. Ext. N. W., between Wisconsin and Idaho Aves.; blank proposal forms, specifications and information may be obtained from chief clerk, Engineer Department, Room 427 District Bldg., Washington.

**Hardware.**—See "Naval Supplies."

**Handles.**—Biddle Purchasing Co., 107 Chambers St., New York, wants addresses of Southern manufacturers of handles for agricultural tools.

**Hoisting Engine.**—W. C. Wright, Box 195, Tulsa, Okla., wants second-hand 8x10 double-cylinder three-drum hoisting engine without boiler.

**Hoisting Machinery.**—See "Pneumatics Machinery, etc."

**Ice Machinery.**—Mt. Pleasant Ice Co., J. E. Anderson, president, Mt. Pleasant, Tenn., is ready for bids on 15-ton ice plant.

**Ice Machinery.**—Beeville Manufacturing Co., Beeville, Tex., will open bids February 1 to install 20-ton ice machine.

**Iron Radiation.**—College Committee Board of Regents Oklahoma Agricultural and Mechanical College, Stillwater, Okla., will receive bids until noon January 17 for furnishing cast-iron radiation for new engineering building and chapel and library; direct radiation: 2230 square feet three column 38 inches high, 960 square feet two column 38 inches high, 70 square feet wall radiation; direct indirect: 1520 square feet two column 38 inches high, 4207 square feet two column 32 inches high, 99 square feet two column 28 inches high; direct indirect radiation to have box bases and wall boxes complete; bids to be sent to J. H. Connel, Stillwater, Okla.



**Lathe.**—Bentall Machine Co., 803 Washington St., Suffolk, Va., wants 42 or 48-inch second-hand lathe.

**Lock Construction.**—Trustees Internal Improvement Fund of Florida, State Capitol, Tallahassee, Fla., will receive bids until 10 A. M. February 1 for building concrete lock in Miami drainage canal about four miles from Miami, Fla.; complete drawings and specifications may be obtained from J. O. Wright, chief drainage engineer, Tallahassee, on payment of \$2; certified check \$500. Address proposals to Albert W. Glichrist, Governor and chairman Trustees Internal Improvement Fund.

**Locomotives.**—See "Railroad Equipment, etc."

**Mattress-factory Equipment.**—Herbert E. Giles, care Gunter & Giles, Alken, S. C., wants prices on mattress machinery and information on establishment of factory.

**Motor Trucks, etc.**—W. V. Moore, 613 H St. N. W., Washington, D. C., wants to correspond with manufacturers of motor trucks and dealers in wagons with a view to agency.

**Naval Supplies.**—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 23, and opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., a quantity of hardware and tools. Applications for proposals should refer to schedule 4231. Blank proposals furnished upon application to bureau. T. J. Cowie, Paymaster-General.

**Naval Supplies.**—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 23, and opened immediately thereafter, to furnish at Navy-yard, Norfolk, Va., a quantity of naval supplies as follows: Schedule 4226, surface condensers; schedule 4234, bronze rivet rod, bar steel; schedule 4235, white lead, chrome green, whiting; schedule 4236, bluish; schedule 4237, brass bolts and nuts, rolled and sheet brass, bolt copper, sheet copper, copper tubing, wrought iron or steel pipe, valves, brass cocks; schedule 4239, steam hose, asbestos plaster cement. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to navy pay office, Norfolk, Va., or to bureau. T. J. Cowie, Paymaster-General.

**Naval Supplies.**—Navy Department, Bureau of Supplies and Accounts, Washington, D. C., receives bids until January 30 for furnishing 30,000 dark-red brick, miscellaneous lot of twist high-speed drills, 12 pneumatic hammers, 300 pounds of hydraulic leather, 15 guard frog rails, 800 feet of seven-eighths-inch steel hoisting rope and 156 brass globe valves, schedule 4255; also 10,000 pounds of nickel steel bar, 38,500 pounds of structural steel angles, 114,000 pounds of structural steel and boiler plates and 1470 pounds of structural steel plates, schedule 4256; delivery Navy-yard, Washington, D. C.; for schedules apply navy pay office nearest navy-yard.

**Paving.**—Julien Smith, City Engineer, Selma, Ala., will receive bids until noon January 19 for construction of 1000 square yards vitrified brick, 2000 square yards cement pavement, 12,000 square yards wood block, vitrified brick, bitulithic, asphalt, asphalt block, concrete or Hassam on concrete base or bitulithic binder macadam on chert or screened stone foundation; about 4500 linear feet granite curb or combined curb and gutter, necessary storm sewers, inlets, etc.; specifications furnished on application; certified check \$1000.

**Paving.**—W. T. Echols, City Clerk, Hugo, Okla., receives bids until 8 P. M. January 16 for paving, grading and otherwise improving several streets; paving material, rock asphalt; improvements will include 9150 cubic yards earth excavation, 5834 linear feet straight curb and 36,190 square yards pavement; plans and specifications on file with City Clerk, and copies may be obtained by enclosing \$4.

**Paving, etc.**—P. F. McDonald, City Commissioner, and William R. Pouder, Recorder, Johnson City, Tenn., will receive bids until 7 P. M. February 1 for paving streets with brick, asphalt, bitulithic, wood block, granite or concrete, place concrete curb and gutter and construct bridges, sewers and storm-water drains for Improvement District No. 9; approximate quantities, 600 cubic yards excavation, 5900 square yards street paving, 2900 linear feet curb and gutter, 1350 linear feet 6-inch sewer connections, 140 linear feet 12-inch terra-cotta drains, 2 catch-basins, 100 cubic yards reinforced concrete to cover creek 23 feet wide; certified check 10 per cent. of bid; plans and specifications on file with City Engineer.

**Paving.**—D. Barker, Mayor of Houston Heights, Tex., Klam Bldg., Houston, Tex.,

receives bids until 8 P. M. January 27 for paving Boulevard from White Oak Bayou to Nineteenth Ave. with brick, creosoted blocks, asphalt, bitulithic or concrete; class to be determined after bids have been considered; about 47,200 square yards paving; plans and specifications on file with engineers, Howe & Wise, 722-723 First National Bank Bldg., Houston, Tex., and in Mayor's office.

**Piledriving Machinery, etc.**—Geo. T. Allen, Panama City, Fla., is interested in piledriving and hosting machinery; wants to correspond with manufacturers.

**Pipe.**—See "Water-works Materials."

**Piping.**—Hub Oil Co. No. 1, Vivian Bank Bldg., Vivian, La., is now receiving proposals for piping, etc.

**Piping.**—Baltimore (Md.) Board of Awards will receive bids at office of City Register, City Hall, until 11 A. M. January 17 for furnishing and installing complete system of underground feeders from high pressure pumping station, South St., to Court-house, City Hall and two City Hall Annexes; certified check \$500; drawings and specifications on file with Clarence E. Stubbs, Inspector of buildings.

**Plows.**—See "Farming Implements."

**Pumping Machinery.**—See "Well-drilling, etc."

**Pulverizing Mill.**—Fort Mountain Tale Co. of Georgia, Clark H. Abbott, manager, 29 Broadway, New York, wants prices on mill for pulverizing talc.

**Rails.**—Quapaw & Lincolnville Railroad, J. D. McIntyre, vice-president, Miami, Okla., wants to buy two miles of track; at least 60-pound steel.

**Railroad Equipment, etc.**—Jones Purchasing Agency, 507 Andrus Bldg., Minneapolis, Minn., wants 10 sections of through truss bridge not under 150 feet, lot of 56-pound relay rail and two high-grade interurban cars; delivery on Mississippi River near Oklahoma City; also wants prices (delivery in Georgia near Atlanta, or any seaport town on boat) on 30 miles of 60-pound and 15 miles 65-pound relaying rails, with full complement of angles, bolts, spikes and 10 split switches complete, 30 flat cars (50,000 pounds capacity, 40 feet), 20 ballast cars (center to side dump), 50-ton standard-gauge mogul locomotive (150 pounds pressure), 3 passenger and 2 combination coaches, 1 "Jim Crow" car, 20 miles 40-pound relay rails, 30 log cars, 2 33-ton Shay engines, 150 feet through truss and 3 50-foot through truss railroad bridges; terms cash on surrender of bill of lading.

**Reinforcing Bars, etc.**—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until January 22, and then opened, for furnishing steel reinforcement bars and centrifugal pump pump, direct connected to induction motor and mounted on truck, together with necessary fittings. Blanks and general information relating to this circular (No. 672) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York city; 614 Whitney-Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from the United States Engineer offices in the following cities: Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy, and Commercial Club, Tacoma. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**Refrigerating Machinery.**—Wiley's, Atlanta, Ga., wants to correspond with manufacturers of refrigerating machinery suitable for candy factory.

**Reservoir.**—Proposals received by Board of Water Commissioners, Charlotte, N. C., at office of clerk until 8 P. M. February 1 for building reservoir; work will include about 55,000 cubic yards of embankment, 6000 square yards six-inch concrete slope, 600 cubic yards concrete core wall, clearing, grubbing, stripping, etc.; plans and specifications on file at offices of clerk and engineer in Charlotte; copies of form of proposal, etc., furnished on deposit of \$10; certified check for \$3000; usual rights reserved; A. H. Wearn, clerk; Gilbert C. White, engineer.

**Rock Crusher.**—J. J. Ivey, Guntersville, Ala., wants new or second-hand rock crusher, five cubic yards per 10 hours capacity; one-half size; to crush material like furnace slag.

**Road Construction.**—Commissioners King's Highway Road District, Hal Myers, secretary, Sikeston, Mo., will receive bids until 2 P. M. January 18 for construction and improvements of about 10 1/2 miles of road; plans and specifications on file with

Mr. Myers; certified check 10 per cent. of bid.

**Road Machinery, etc.**—Southern Engineering & Contracting Co., 306 American National Bank Bldg., Macon, Ga., will want road roller and full equipment for road work, street paving, etc.; also wants information and prices on supplies for oiling of roads.

**Roofing.**—C. P. Marriott, Tryon, N. C., wants addresses of manufacturers of tile roofing.

**Safe.**—Central Banking & Trust Co., Asheville, N. C., wants prices on safe.

**Safe, etc.**—J. M. Wilson, Lottie, La., wants prices on second-hand safe, vault and other bank fixtures.

**Sewer Construction.**—Board of Public Works, E. E. Purcell, secretary, Kansas City, Mo., will receive bids until 2 P. M. January 16 for construction of complete sewage pumping plant in Santa Fe St. near United States harbor line of Missouri River; certified check for \$500, payable to Gus Pearson, City Comptroller; plans and specifications may be seen and information obtained from Board of Public Improvements, or plans and specifications may be obtained on deposit of \$3.

**Sewers.**—Board of Public Works, Kansas City, Mo., will let contract January 19 to construct third section of Brush Creek sewer; total length 4500 feet, consisting of 27-inch and 33-inch pipe; latter will be monolithic construction or reinforced concrete; 27-inch pipe will probably be of clay; Paul McCeehan, engineer in charge.

**Sewer Construction.**—See "Paving, etc."

**Sewer Construction.**—Baltimore (Md.) Board of Awards will receive bids at office of City Register, City Hall, until 11 A. M. January 24 for construction of lateral sanitary sewer at Bayview, sanitary contract No. 80; specifications and plans can be obtained from Sewerage Commission, 404 American Bldg., after January 12; charge of \$3 made for each specification and blueprints; certified check \$1000; approximate quantities, 4435 linear feet vitrified pipe sewer, 8 to 12 inches in diameter; 3000 cubic yards earth excavation in trenches; 1470 linear feet excavation in tunnel for 10 and 12-inch diameter sewers; 160 linear feet excavation in shaft for manholes; 700 cubic yards concrete masonry; 700 linear feet underdrain; 240 linear feet standard manholes; Charles England, chairman Sewerage Commission.

**Slate.**—J. F. Barnes, Jackson, Miss., wants delivered prices on Bangor slate.

**Spiral Springs.**—Jacobs News Depot Co., 119 W. Landry St., Opelousas, La., wants addresses of manufacturers of spiral springs.

**Steel Frame.**—San Benito Cotton Gin Co., Box 256, Houston, Tex., wants prices on steel frame (f. o. b. San Benito, Tex.) for gin building, 36x128 feet; 18-inch walls; one-quarter or one-third pitch, single span.

**Steel, etc.**—Proposals at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 16, and opened immediately thereafter, to furnish at Navy-yard, Norfolk, Va., quantity of naval supplies as follows: Schedule 4212, alcohol; schedule 4214, galvanized sheet steel; sched-

ule 4217, silk thread. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to navy pay office, Norfolk, Va., or to bureau. T. J. Cowie, Paymaster-General, U. S. N.

**Stone Lathe.**—Blue Pearl Granite Co., Winston-Salem, N. C., wants stone lathe for immediate delivery.

**Sugar Machinery.**—Florida Association, 1914 Cherry St., Philadelphia, Pa., wants information and prices from manufacturers on machinery for sugar-cane mill for Pinellas Farms, near St. Petersburg, Fla.

**Sugar Refinery.**—A. E. Foster, Summerdale, Ala., wants estimates on plant for refining sugar; equipped to take in cane and turn out finished product.

**Tile.**—See "Roofing."

**Traction Engines.**—C. A. Boynton, North Whitefield, Maine, wants addresses of manufacturers of traction engines; burning fuel oil preferred.

**Water-wheel.**—Fort Mountain Tale Co. of Georgia, Clark H. Abbott, manager, 29 Broadway, New York, wants prices on 30-horse-power water-wheel, 24 feet fall.

**Water-works.**—See "Electric-light Plant and Water-works."

**Water-works Materials.**—J. L. Crawford, Alpine, Tex., wants prices on gas engines, pipe, hose, etc., for proposed town water-works to cost about \$3000.

**Woodworking Machinery.**—See "Box Machinery."

**Water-works Machinery.**—Bids received by City Council, Paducah, Tex., until 8 P. M. January 18, and opened four days later at 8 P. M., for following water-works material and equipment: 7440 feet 8-inch, 2860 feet 6-inch, 574 feet 4-inch cast-iron pipe, cast-iron specials, valves, valve boxes and hydrants; 160,000-gallon elevated tank, one 10-horse-power and one 25-horse-power gasoline engine, 110-gallon-per-minute triplex pump and 500-gallon-per-minute rotary pump. Specifications may be obtained from J. Ross Bell, City Secretary. Usual rights reserved. Fountain-Shaw Engineering Co., Dallas, Tex., engineer.

**Well-drilling.**—Mayor and Board of Aldermen, Lexington, Tenn., will receive bids until 2 P. M. January 18 for drilling deep well for water-works; certified check \$250; specifications, proposal blanks and further information may be obtained from City Recorder or consulting engineer, R. C. Huston, 1634 Exchange Bldg., Memphis, Tenn.; C. G. Gathings, Mayor.

**Well-drilling, etc.**—Hub Oil Co. No. 1, Vivian Bank Bldg., Vivian, La., will open bids for drilling, pumping machinery, etc., about April 1.

**Woodworking Machinery, etc.**—Texas Cedar Chest Co., A. H. Berry, president, Dallas, Tex., wants prices on woodworking machinery, with electric motor and shaft.

**Woodworking Machinery.**—James P. Lewis, care Union Bank, Whitesburg, Ky., wants new or second-hand 8 or 10-inch sticker and molder machine.

## INDUSTRIAL NEWS OF INTEREST

### Wants to Buy Electric-Light or Ice Plant

An advertiser in our "Classified Opportunities" columns states that he wishes to buy an ice or electric-light plant in a growing Southern town.

### Wants to Build Electric Railroads.

Robert S. Kennedy, 70 Fifth Ave., New York, wants to be informed of opportunities for building local and interurban electric railroads in and between cities of 3000 people and upward in the South and Southwest.

### N. C. Walpole Succeeds LeSourd & Walpole.

The firm of LeSourd & Walpole, with offices in the Brown-Marx Bldg., Birmingham, Ala., has been dissolved. N. C. Walpole will continue to represent the Niles-Bement-Pond Company, the Pratt & Whitney Co. and the Cleveland Pneumatic Tool Co. as sales agent in the Southern States, with offices in the Brown-Marx Bldg.

### Planing Mill Plant for Sale.

Private bids will be considered until February 20, at which time a complete milling plant located at Lillington, N. C., on Raleigh & Southport Railroad will be sold. The sale will comprise 15 acres of land, main building, two drykilns, boiler building, three tenement-houses and two planers. The capacity of the plant is 15,000 feet daily, and it is ready to operate. E. G. Davis, Fayetteville, N. C., is trustee.

### Severn D. Sprong, Electrical Engineer.

Severn D. Sprong has resigned his position as chief electrical engineer of J. G. White & Co., Inc., and accepted that of electrical engineer of the Brooklyn Edison Co., retaining the relation of consulting electrical engineer to J. G. White & Co. Mr. Sprong's new position, in his home city, in which he took up his duties on January 1, is one for which he is well fitted. J. G. White & Co. express their good wishes for his continued success.

### Shenandoah Valley Apple Lands.

Among the apple-land-development enterprises of the Shenandoah Valley is the Shenandoah Valley Apple Lands Co. of Waynesboro, Va. This company owns 2000 acres of proven apple land, which it is selling in 10-acre orchards, having already sold 450 acres, with one-half planted to apples. It contracts with the buyer to clear, plow and cultivate land for five years, to plant each acre with the best nursery stock and to prune, spray and cultivate the trees according to the most approved orchard practice, so that the complete commercial orchard is delivered to the buyer.

### Timber Land and Corundum Deposits for Sale.

Property consisting of 800 acres of valuable timber land in Clay county, North Carolina, which contains also deposits of high-grade corundum, will be sold at public auction as a whole or in parcels to suit pur-



chasers at the courthouse, Hayesville, Clay county, North Carolina. There is also on the property a large building filled with machinery installed for cleaning corundum, and an engine and boiler. The date of sale and further information may be obtained by addressing Edmund B. Norvell, Murphy, N. C., or F. S. Johnston, Franklin, N. C., commissioners.

#### Increase in Capacity of the Clinchfield Portland Cement Corporation's Plant.

On account of the extensive sales of "Clinchfield Portland Cement" since the completion of its mill at Kingsport, Tenn., in June, 1911, the Clinchfield Portland Cement Corporation has found it necessary to considerably increase its capacity. It plans to make still further additions as its trade increases so that it may be at all times well equipped to supply its products promptly. John A. Miller is president of the company, H. R. Dennis vice-president, W. M. Bennett secretary and treasurer, and David H. Houston sales manager.

#### Bids Opened for Water-Works at Jesup, Ga.

Contracts in connection with the construction of the water-works at Jesup, Ga., of which Arthur Pew of Atlanta is the consulting engineer, have been awarded as follows: Three hundred tons of cast-iron pipe and specials to the General Pipe & Foundry Co., Atlanta, Ga.; valves and hydrants to the Columbian Iron Works, Chattanooga, Tenn.; pumps and compressors to Henry R. Worthington, 115 Broadway, New York; one 75-kilowatt alternator to the Westinghouse Electric Co., East Pittsburgh; concrete tank and tower and concrete suction basin to R. T. Aderhold, Atlanta; pipe laying to B. F. Roberts, Macon, Ga.

#### Rebuilds Railroad Equipment and Contractors' Plants.

The General Equipment Co., 39 Church St., New York, purchases and thoroughly rebuilds railroad equipment, locomotives, contractors' equipment, etc., and after placing them in first-class condition, which is guaranteed, such equipment is sold with an intrinsic value appropriate to the price charged. This company makes a specialty of purchasing from railroad and contracting firms their locomotives, contractors' equipment, etc., that are to be replaced by heavier power or larger plants. These are usually good for a number of years of service, particularly after being overhauled and thoroughly rebuilt in the General Equipment Co.'s shops.

#### A New Soot Extractor and Boiler-Tube Cleaner.

The Max Machine Co., Clinton, Mass., is making preparations for the manufacture and sale of a recently-invented vacuum soot extractor and a boiler-tube cleaner, both of which were invented by E. J. McCarthy of Clinton. Both pieces of apparatus are being tried out at the station of the Clinton Gas & Electric Light Co., and the tube cleaner is used in the boiler-room of the Bigelow Carpet Co. and a number of other large plants. It is stated that with these new appliances in use at the Clinton Power Plant it takes but five minutes to clean the three big boilers; that not only do the appliances do away with a great amount of labor, but they also make a considerable saving in fuel required.

#### Recent Additions to the Crocker-Wheeler Organization.

The organization of the Crocker-Wheeler Company has recently been strengthened by the addition of George W. Fowler, W. J. Warder, Jr., and A. K. Selden, Jr. Mr. Fowler and Mr. Warder have joined the company's sales department, while Mr. Selden enters its engineering department. Mr. Fowler has been for many years the sales manager of the Garwood Electric Co. Mr. Warder was formerly chief engineer and superintendent of Roth Bros., in Chicago, and later was connected with the Westinghouse Electric & Manufacturing Co. at East Pittsburgh. Mr. Selden has for some years been in charge of the design of the Interpole adjustable-speed motors manufactured by the Electro-Dynamic Co.

#### Motsinger Rotary Engines.

Referring to its plans for establishing works in the South, the Motsinger Rotary Engine Co. of Greensburg, Pa., writes to the Manufacturers Record as follows: "The best outlook for business for us seems to be in the South. The mechanical engineer of one of the land and irrigation companies of San Antonio has been here and tested our engines on both steam and compressed air to his full satisfaction. He has a scheme

for pumping his wells with compressed air, using our engines, made upright, direct connected with the centrifugal pumps at each well. He has given us an unconditional order for 16 engines from 15 to 20 horsepower. We have had test runs made on our engines at Carnegie Technical Schools, and have gotten a fine record for economy and durability."

#### American Steel Dredges on Oklahoma Drainage Contract.

The contract for a drainage system recently awarded to the Sprinkle Company, Fort Wayne, Ind., calls for the excavation of a relief channel to the Deep Fork of the Canadian River entirely across Lincoln county, Oklahoma. The canal is 40 feet wide at the bottom at the west line of Lincoln county, and gradually widens to 65 feet at the east line of the county. The work will be done entirely by floating dredges. Two large steel dredges built by the American Steel Dredge Co. of Fort Wayne will be used in carrying on the work. These dredges will have dippers of two and one-half yards capacity, one with a 70-foot boom and the other one with an 80-foot boom. There will also be five small lateral ditches. The number of acres affected in the county is 36,000, all fertile and adapted to grains, such as wheat, corn and rye, also alfalfa and cotton.

#### Seeking a Site for Concrete-Tie Factory.

The Universal Concrete Tie Co., Whitney-Central Bldg., New Orleans, writes that it is seeking an advantageous location for a plant in which to manufacture the metal parts of Perical concrete ties, where good transportation facilities, cheap fuel and proximity to rolling mills offer abundant supply of material and facilities for the conduct of the business and the proper distribution of the product. Communities interested in the acquisition of such an enterprise may open negotiations with the company and make known their advantages. It has been stated that two or three Northern cities have taken this matter up, and have offered such inducements as will insure the location of this plant in the North if more favorable propositions are not received from cities nearer New Orleans. The Whitney-Central Trust & Savings Bank of New Orleans has agreed to act as fiscal agent of the company, and will properly receipt for funds and attend to the delivery of stock sold.

#### Alfred M. Quick Opens Consulting Engineer's Office.

An office has been established in the Munsey Bldg., Baltimore, by Alfred M. Quick, where he will continue his practice as consulting engineer. Mr. Quick was chief engineer of the Baltimore Water Department for 11 years, in which position he had charge of the operation of large pumping and dredging plants and machine shops; made plans and specifications for and installed and tested large pumps, boilers, dredging machinery and other mechanical equipment; designed and constructed large reservoirs, standpipes, water-distribution systems, filter plants, bridges, buildings, etc., and made complete plans for a great dam, impounding reservoir and filter plant for enlarging and improving the water supply of Baltimore. In addition he has had about 14 years' experience in private engineering work, including investigations and reports on water supply, sewerage, hydraulic power and other engineering propositions for cities, towns, banks, trust companies and individuals, and designing and supervising the construction of water-works, sewerage systems, reservoirs, standpipes, filters and power plants. He is prepared to make investigations and reports on water supply and purification, sewerage, drainage and hydraulic power propositions; to make plans and specifications and supervise the construction of such works; to make valuations of existing works, or to advise as to their operation or management.

#### The Hercules Plaster Board Co. to Construct Additional Plants.

In addition to its factory at Hampton, Va., the Hercules Plaster Board Co., 1011 Chestnut St., Philadelphia, states that it intends to construct four plants as soon as practicable, each with a capacity of 10,000 Hercules boards per day. The first is to be in the vicinity of Philadelphia; the second at Norfolk, to take care of the already-established trade in Virginia, North and South Carolina and other Southern Seaboard States; the third is to be in a southwestern State, the location to be decided after a comparison of rail and water rates, distributing facilities, local inducements, etc.; the fourth will probably be located at either Chicago or St. Louis. The capacity of the

"Hercules" factory at Hampton is 700 boards per day, and it is stated that during the past year this output has been sold almost entirely in Virginia, North and South Carolina, and that the plant has been unable to fill all its orders. The Hampton plant will continue to run until superseded by the Norfolk plant. It is expected that the Philadelphia plant will be putting out 10,000 boards a day in a few months, and the other plants will follow as rapidly as possible. The Plaster Products Co., Hampton, has assigned its patents, factory at Hampton, good-will, etc., to the Hercules Plaster Board Co. Samples of "Hercules" plaster boards and all information required may be obtained by addressing The Charles E. Doddridge Company, 1011 Chestnut St., Philadelphia.

#### Busch-Sulzer Bros.-Diesel Company to Erect \$500,000 Factory.

The site for the Busch-Sulzer Bros.-Diesel Engine Co.'s factory in St. Louis has been selected and the raising of buildings and grading planned. The site contains eight and two-thirds acres and represents a total cost to the company of \$173,000. It is about 750 feet square and just south of the United States Arsenal. It is estimated that it will cost \$10,000 to put the site in condition for the erection of the big plant, which will consist of office buildings, power-house, several machine shops, a main and smaller foundries, blacksmith shops, trade shops and testing shop. The buildings and equipment will cost \$500,000. It is intended to enlarge the plant to double its first capacity as soon as it is in operation. The company, which is incorporated for \$2,100,000, selected St. Louis after several offers had been made from other cities. The company in St. Louis, of which Adolphus Busch is head, will be a companion to the companies in Switzerland and Germany. Associated with Busch in the business in St. Louis will be Robert Sulzer, one of the original manufacturers of the Diesel engine, and Rudolph Diesel, inventor of the engine, which uses crude oil as fuel. Mr. Busch bought the patent rights for the United States and Canada in 1898, and for years has had in mind the founding of this factory. He had an engine in operation in the Alps' concession at the World's Fair. This plant will be one of the most important additions to the manufacturing interests of St. Louis in recent years, and about 700 workmen will be employed at the start.

#### Dolarway Pavement with Concrete Foundation.

In order to obtain the valuable qualities of a concrete foundation for pavements, and at the same time to provide a wearing surface which is clean, noiseless, resilient and similar in appearance to other forms of bituminous pavement, the Dolarway Paving Co., 95 Liberty St., New York, and 519 Title & Trust Bldg., Chicago, has introduced Dolarway pavement, which makes it possible to construct a highway with a concrete foundation at a cost said to be a little over a dollar per square yard, depending on locality and conditions. The construction consists of from five to six inches of Portland cement concrete, provided with the necessary expansion joints. The surface is then treated with adhesive Dolarway bitumen and with coarse sand, fine gravel or screenings. This seals the concrete, prevents cracking and chipping and produces the desired surface. Any contractor or city that has facilities for building concrete walks can build a Dolarway pavement, as no other tools or machinery are used in this construction than those required for building such sidewalks, with the exception of a tank wagon for spreading the Dolarway bitumen. About 100,000 square yards of this pavement has been laid at Ann Arbor, Mich., where the authorities are quoted as saying that it is most satisfactory and has proved to be economical. The Dolarway company owns and controls the Dolarway pavement, and is now making arrangements for local contractors to lay this form of pavement in various parts of this country and Canada. A considerable amount of the territory has been allotted. Engineers, contractors and city authorities interested will be given full information regarding this proposition on request to the company at either its New York or Chicago office.

#### TRADE LITERATURE.

##### The Yarnall-Waring Company.

A booklet called the "Blow-Off" has been issued by the Yarnall-Waring Co. of Philadelphia, which includes illustrations and descriptions of the Simplex pipe clamp, the Lea recorder for measuring boiler feed at heater temperature and pressure, the Simplex Caskey furnace door operating valve,

the Simplex seatless blow-off valve and other information of value and interest to engineers. The "Blow-Off" is published monthly and will be sent free to engineers on request.

#### Concerning the Kinking of Wire Rope.

Faulty handling of wire rope, by which kinks are formed, frequently resulting in great damage, is treated of by A. Leschen & Sons Rope Co., St. Louis, in a small folder in which six illustrations are included. These illustrations show how the kinks are formed with the resulting damage, showing broken wires. Kinks can be easily avoided by following the caution that wire rope must not be coiled or uncoiled like a hemp rope; when not on a reel, roll it on the ground like a wheel or hoop to prevent kinking or twisting.

#### Concreting in Cold Weather.

A very reasonable booklet on the subject of mixing, handling and depositing concrete in freezing weather has recently been published by the Universal Portland Cement Co. of Chicago and Pittsburgh. The necessity of a work of this character has long been felt by architects and cement users generally. This thorough study of the subject contains much matter of practical value to persons interested in doing concrete work in the winter months. It may be had free of charge upon request to either the Chicago, Pittsburgh or Minneapolis office of the Universal Portland Cement Co.

#### The Lehigh Portland Cement Co.'s Eleven Mills.

In the New-Year's issue of "The Lehigh," published by the Lehigh Portland Cement Co., main office Allentown, Pa., a map is included which gives the location of its 11 mills. The advantages of these locations as regards shipments and prompt delivery are graphically shown by the map. The six plants which include these 11 mills are located at West Coplay, Ormrod, Fogelsville and New Castle, Pa.; Mitchell, Ind., and Mason City, Iowa. The annual capacity of the six plants is 11,000,000 barrels. The Southern office of the company is in the Memphis Trust Bldg., Memphis, and the main western office is at Chicago, Ill.

#### Clinchfield Art Calendar for 1912.

An artistic copy of the painting "After An April Shower," 14"x28", forms the very notable art portion of the 1912 calendar received from the Clinchfield Coal Corporation, Spartanburg, S. C. The painting represents a farm scene with a picturesque old building in the foreground and a road leading to the farmhouse in the distance. The remarkable color effects of sky and landscape as depicted after a shower, and the skillful way in which the entire card (30"x40") has been arranged, makes this calendar one of the most attractive and interesting that could well be devised. The single name Clinchfield appears at the top of the card. Loops of silk cord at each upper corner provide a convenient means of hanging the card.

#### Ingersoll-Rand Company's Telescope Feed Hammer Drill.

Several views and a description of the "MC-22" telescope feed hammer drill, manufactured by the Ingersoll-Rand Company, 11 Broadway, New York, are shown in catalogue No. 4016, recently issued by the company. This drill is of the "valveless" type, in which the piston itself performs the valve functions by covering or uncovering ports, which control its forward and back movement. This tool is intended for stopping, raising, and, to a limited extent, drifting. It is not recommended for steady work in holes at less than twenty degrees from the horizontal, because of the difficulty of cleaning such holes. The telescope feed of the "MC-22" is that designated by the company as the "reversed feed," in which the inner, or piston, tube is attached to the drill, and the outer, or cylinder, tube runs out under pressure. The advantage of this arrangement is that the hose is stationary, not turning with the drill; and the tool may be used on a tripod or column by clamping the outer feed cylinder to the mounting.

#### Huhn Metallic Packing in Ammonia Compressors.

The excellent results obtained from using Huhn metallic packing in a 300-ton De La Vergne refrigerating machine are described in a folder recently issued by the Huhn Metallic Packing Co., 410 E. 42d St., New York. It is stated that the piston rods to which the packing was applied are in practically the same condition now as when the packing was fitted in place 20 months ago.



The packing appears to be good for several years of service. It is stated that the compressors have shown no sign of leak of ammonia under any conditions, although the compressors have been completely frozen over at times, and at other times no frost at all was visible. The engineer in charge of the plant of which this machine forms a part gives a statement of the results obtained and advantages found. The folder will be sent to interested persons on request.

#### Calendars for 1912 Received.

In addition to the calendars, receipt of which have been previously acknowledged, the following have been recently received: A large calendar from Matthew Addy & Company, Cincinnati, with branches in Philadelphia, St. Louis, Chicago and Pittsburgh, dealers in pig-iron, fluor-spar, coke and alloys. The calendar consists of a large block with one day to each sheet. Another from The Wolf Company, Chambersburg, Pa., manufacturer of wheat, rye, corn and alfalfa mills power transmission appliances, the inventor of the "Wolf Gyrator System" of flour milling; another from the Ashland Fire Brick Co., Ashland, Ky., and one from McClintic-Marshall Construction Co. of Pittsburgh, with branches in other large cities. Each month occupies a page of this calendar, which is illustrated by different important construction work which has been carried out by the company. A large wall calendar with figures two inches high, one sheet to each month, has been received from the Alpha Photo-Engraving Co. of Baltimore, artists and engravers, makers of printing plates for artistic and mercantile purposes.

#### Gardner-Rix Air Compressors.

The original types and unique features of the Gardner-Rix vertical high-speed air compressors are described and illustrated in the catalogue issued by the Gardner Governor Co., Quincy, Ill. A table of speed ratings of the various types and sizes, including speeds from 200 up to 600 revolutions per minute, is included. It is stated that friction in the Gardner-Rix compressor has been reduced to a minimum so that high speeds do not cause the machine to wear rapidly. The types illustrated include steam and belt driven; tight and loose pulley compressors; motor driven; gasoline driven; portable rigs with electric motor for operating air drills on structural work; also Gardner horizontal compressors, both single and duplex, ranging in capacities from 30 cubic feet to 800 cubic feet. An air-cooled machine suited particularly for garage use, pneumatic water system, paint spraying and similar purposes, is also illustrated. Air receivers of various sizes are also manufactured by the company. This catalogue and other descriptive literature pertaining to the various products manufactured by the Gardner Governor Co. will be sent on request to the company.

#### Vanadium Trade Facts.

Much valuable information concerning the use of Vanadium and the manufacture of Vanadium alloys under the trade names of "Amervan" and "Masvan" is contained in the January issue of American Vanadium Facts, published by the American Vanadium Co., Frick Bldg., Pittsburgh, Pa. The extensive use is noted of Vanadium steel in automobile construction, motor trucks, high-speed motor-boat machinery, high-grade springs, castings, etc. Interesting facts men-

tioned concerning Vanadium are that it was discovered in 1830; in 1890 it was valued at \$10,000 a pound; from that time to the present immense ore beds have been found in Peru and purchased by the American Vanadium Co. Other deposits have been discovered in various parts of the world, including the United States. Methods of refining have been developed and accurate data secured by experts concerning the effects of Vanadium on iron, steel, copper, bronze and other metals. Vanadium alloys are produced in commercial quantities low enough in cost to permit of their use in high-grade steel for armor-plates, springs, forgings, gears, shafts, piston rods, iron and steel castings. It is recognized by steel experts as the "Master Alloy." The American Vanadium Co.'s factories are located at Bridgeville, Pa. The company is prepared to furnish booklets and any information that may be requested.

#### Interurban Traction Development in the Southwest.

As an illustration of the progress and development of the South and Southwest, the Brill Magazine, Vol. V, No. 12, is entirely devoted to the growth and present extent of city and interurban traction in Texas and Oklahoma, with particular references to the types of cars best fitted to the conditions found there. In the great work of building cars for various transportation systems the J. G. Brill Company, Philadelphia, studies the conditions to be fulfilled in each locality and develops a type of car especially suited to those conditions, with all improvements that may be applicable. The transportation systems of Dallas, Waco, San Antonio, Muskogee, Oklahoma City; the Northern Texas Traction Co., a Stone & Webster property operated in connection with the Interurban line between Dallas and Fort Worth; the Dallas Electric Corporation and subsidiary companies, the Texas Traction Co., the Waco Street Railway, the Muskogee Electric Traction Co. and the Oklahoma City Traction Co. are all extensively treated under appropriate headings. A portrait and sketch of the work of J. F. Strickland, president of the Texas Traction Co. and of other electric railway and gas properties in Texas, is included. He first developed the interurban line from Dallas to Sherman, 60 miles, and now the local lines in Denison and Sherman and the connecting line, 10½ miles, have come under the same management. Recently he has been developing a line from Dallas to Waco, 100 miles, with a line diverging to Corsicana, 25 miles distant from Dallas. Another interurban line is being constructed by Stone & Webster 30 miles from Dallas to Waxahatchie. Including the Dallas trackage and the North Texas Traction Co.'s line from Dallas to Fort Worth, about 75 miles are operated by Stone & Webster in and from Dallas. The cars furnished by the Brill Company to meet the conditions of this traffic are described and illustrated; also the cars furnished for the Texas Traction Co. on its line from Dallas to Sherman, 60 miles, and connecting lines, affording opportunity for 100 miles of through electric railway travel. The light-weight cars for Muskogee, Okla.; the cars to be operated by one man for the Waco (Tex.) system; the Brill semi-convertible cars for San Antonio, with prepayment platforms, and the single-truck cars for Oklahoma City are also illustrated and described. This issue of the Brill Magazine is interesting both from an industrial and a car user's standpoint.

that the motor truck is coming, but that it has actually arrived and has made a place for itself in business as secure as the telephone or typewriter. All over the country men at the heads of business will buy motor trucks. They have investigated them and arrived at the conclusion that the use of motor trucks yields a saving in time and money." He states it is his belief that more motor trucks will be sold in the next 90 days than in any 90 days since trucks became a commercial factor. The point that is most impressive in the truck business today is that the broadest, biggest-minded business men of the entire country have recognized its superiority and have decided to adopt it.

#### Federal Motor Truck Co.'s New Catalogue.

The Federal motor truck is fully described and illustrated in a new catalogue issued just in time for distribution at the New York automobile shows. In addition to the information contained in this catalogue, many points of artistic interest have been incorporated in its formation. The cover is a wide departure in such catalogues. It represents a scene on the Mississippi levee, showing a large truck leaving the landing heavily loaded, pulling up the steep incline. In the distance is pictured a Mississippi stern-wheel flatboat, and near by are bales of cotton, with negro deck hands lending activity to the general surroundings. The striking contrast between the boat and other surroundings as compared with the motor truck lends interest to the picture, which strongly represents progression by the adoption of motor trucks in industry. The inside pages carry marginal illustrations showing motor trucks in action in manufacturing and other industries. The illustrative features of the catalogue, together with the information contained, combine to make this a particularly interesting and valuable addition to the motor-truck literature of the season.

#### Motor Truck Coal Delivery in Atlanta.

As an illustration of the economical use of motor trucks in the South the use of a five-ton motor truck by the management of the Candler Bldg., Atlanta, is interesting. An average of 20 tons of coal per day is used, and in the winter months as much as 30 tons are used in a day. After spending considerable money for extra teams and demurrage on railroad cars the owners of the building decided to build their own coal yard and do their own hauling. This yard is one and one-half miles from the building. When brought in the cars are immediately switched to the trestle and the coal is dumped into bunkers 15 feet below, requiring only 10 minutes to empty each car. As soon as the cars are emptied the railroad company is notified, thus eliminating demurrage charges. The coal is then carted to the building by this five-ton motor truck, four loads being hauled each day, with double this amount, or 40 tons, on Saturdays. Two loads of cluders and refuse are hauled away and delivered to purchasers of this waste material each day. Before adopting the motor truck two double teams and four men were required for this service. The managers of the building state that, in addition to other economies, the demurrage charges alone represent a saving of 8 per cent. on the total investment. The truck selected is a four-cylinder 70-horse-power water-cooled Mack truck, manufactured by the International Motor Co., 1770 Broadway, New York. After being in service several months the only repairs necessary were new linings for the brake bands. In connection with the extensive use of motor trucks in coal delivery a 10-ton Hewitt body has been made for a truck in which a coal-conveying apparatus is installed, which carries the coal to sufficient height to pass down a chute, by means of which it is speedily unloaded. Still another means of unloading coal rapidly is provided on a Saurer truck in the form of an elevating device by means of which the body and load are elevated sufficiently to permit the coal to run out by gravity and pass through the chute to the bin.

#### The Season of Motor Shows.

The automobile shows in New York, of which the Importers' Salon at the Hotel Astor has recently been given, the Madison Square Garden Exhibit is in progress and the Grand Central Palace Show is just commencing, have occupied the attention of the automobile and motor-truck world for some time. Everything points to 1912 as the banner year for auto shows. The motor-truck part of the Garden Show contains 34 exhibits of motor trucks and delivery wagons, the aggregate value of which is estimated at \$2,500,000 and the individual values of which vary from \$350 to \$7500. Approximately this number of exhibits of industrial

and commercial motor vehicles is being made at the Grand Central Palace Show, but there are no duplications of exhibits between the two shows. From headquarters of the Chicago Automobile Show comes news that already the number of manufacturers of motor trucks and delivery wagons who will definitely display their latest models during the second week or commercial section from February 6 to 10 exceeds the list at last winter's show by exactly 20. Yet new applications for space are being made every week, with practically no space to be allotted. All space in the Coliseum Building and Coliseum Annex was taken long ago by 44 manufacturers, and the Armory, which was not used during the second week of last winter's show, has been divided among 30 makers. Thirty-three of the companies that will show commercial cars this winter were not seen at Chicago last February, and most of these are new to the public, never having made displays at any show. Among the late applications for space are nearly a dozen companies whose names are unfamiliar even to the persons in close touch with the trade, so rapid is the development of the commercial vehicle industry. Not all of the new makes of trucks are built by new companies, however. At least eight are just being brought out by well-known manufacturers who have been building private passenger cars for years, several for a decade or more. Almost everything in the form of a self-propelled vehicle for use on the public roads will be seen at the show, from a three-wheeled motorcycle with parcels van, suitable for use by small laundries, men's furnishing stores, etc., to a 10-ton truck for hauling coal or large and heavy materials. There will be many special-purpose machines, including motor fire apparatus, patrol wagons, ambulances, hearses, omnibuses, emergency wagons for street railways, dump trucks fitted with tipping bodies, operated by power from the motor; trucks equipped with power winches for hoisting purposes, and even a tractor truck for hauling plows in the field and driving threshing machines, circular saws and other farm machinery. Plans have been formulated for what is expected to be the greatest automobile and commercial motor vehicle show ever attempted in the South to be held at the Auditorium Armory, Atlanta, Ga., from February 10 to 17, 1912. More than \$30,000 has already been pledged for the enterprise. Plans are also being considered by the Norfolk Automobile Trade Association for an exhibition in Norfolk to be held about the first week in March.

## FINANCIAL NEWS

### Review of the Baltimore Market.

#### Office MANUFACTURERS RECORD,

Baltimore, Md., January 10.

The Baltimore stock market was moderately busy during the past week. In the trading United Railways common sold at 18½; do. incomes, 62 to 62½; do. funding 5s, 86 to 86½; do. notes, 99½ to 99%; do. 4s, 85 to 85½; Consolidated Gas, Electric Light & Power, 96 to 97; do. preferred, 101½ to 102½; do. 4½s, 88 to 88½; do. notes, 5s, 90½; Consolidated Gas 4½s, 97½; Seaboard Air Line preferred, 49; Seaboard Company second preferred, 64½ to 64; Seaboard 4s, stamped, 89½; do. adjustment 5s, 83 to 84½; Mt. Vernon-Woodberry Cotton Duck 5s, 78½ to 77½; G.-B.-S. Brewing incomes, 3 to 3½; do. 4s, 33½ to 36.

Bank stocks sold as follows: Bank of Commerce, 30¾; German-American, 107½; First National, 135; Mechanics', 29¾; Marine, 43½; Bank of Baltimore, 164 to 165; Farmers and Merchants', 50.

Maryland Casualty experienced a brisk rise, selling from 91½ up to 95½; American Bonding, 79; Continental Trust, 230 to 224; Fidelity & Deposit, 150½ to 149½; United States Fidelity & Guaranty, 181½ to 180; Baltimore Trust, 165.

Other securities were traded in thus: Fairmont & Clarksburg Traction 5s, 100; Houston Oil common, certificates, 8½ to 9½; do. preferred, 68½ to 70½; Wilmington & Weldon 5s, 110 to 110½; Atlantic Coast Line convertible debenture 4s, 101½ to 101¾; do. South Carolina 4s, 96½; do. Connecticut 5-20s, 91; do. Connecticut stock, 200; do. do. 5s, certificates, 104¼; Augusta & Alken common, 24½ to 25; do. preferred, 70; Milwaukee Gas 4s, 90¼; Pennsylvania Water & Power common, 60 to 60½; do. 5s, 90½; American Caramel preferred, 96; Memphis Street Railway 5s, 90; Norfolk & Atlantic Terminal 5s, 94; Norfolk & Portsmouth Traction 5s, 89; Baltimore Electric 5s, stamped, 94½ to 95; do. pre-

## MOTOR TRUCK AND TRACTOR NEWS

#### The Plaza Tractor Co.

A company is being organized by M. S. Palmer under the name of the Plaza Tractor Co. at Laton, Tex., to manufacture motor trucks, farm tractors and express wagons.

#### Wants the Agency for Motor Trucks and Delivery Wagons.

W. V. Moore, 613 H St. N. W., Washington, D. C., dealer in boilers, engines, sawmills, separators, balers and flour-mill machinery, writes that he would like to correspond with builders of motor trucks and delivery wagons with a view of securing the agency for handling them in Washington.

#### Motor Fire Apparatus Recommended

The mayors of many Massachusetts cities in their recent inaugural addresses have recommended the purchase of fire apparatus. The officials of some of those cities which already have automobile chemical engines or combination wagons desire to have the horseless equipment extended, while others which have not as yet entered the field of motor fire fighting are eager to do so as the result of the extended successful use of motor fire apparatus in many places in the past year.

#### New Motor Trucks in Baltimore.

For convenience in transporting passengers from the street cars to Notre Dame College that institution has purchased a 25-passenger Grahowsky motor omnibus from the Grahowsky Power Wagon Co., Detroit; D. C. Walker is the Baltimore agent. The Enterprise Fuel Co. has a three-ton Gramm truck for use in suburban and city delivery; J. J. Levin has purchased a 30-horse-power one-ton Federal truck for delivering groceries and provisions; Sellers Transfer Co. has a similar truck for its baggage delivery business. The Auto Outing Co. is the Baltimore agent for Federal trucks.

#### Leaders in Business "Motorizing" Their Hauling Systems.

On his return from a 12,000-mile trip, extending over a period of two months, Geo. L. Sullivan, sales representative of the American Locomotive Co., automobile branch, 1886 Broadway, New York, has told of the spread of the use of the motor truck in the smaller cities. According to Mr. Sullivan, the leaders in business all over the country are "motorizing" their hauling systems. He states that "the time has gone by to say



ferred, 41; Norfolk Railway & Light 5s, 99%; to 100; Charleston City Railway 5s, 104%; Consolidation Coal, 100% to 101; Canton Company (Baltimore), 130; Potomac Valley 5s, 108%; Baltimore, Sparrows Point & Chesapeake 4 1/2s, 96; Virginia New 3s, 87%; do. Century, 88; Chicago Railways 5s, 100; Cumberland & Pennsylvania 5s, 1921, 103%; Jamison Coal & Coke (George's Creek) 5s, 92 1/2; Maryland Electric 5s, 98%; Richmond & Washington 4s, 1943, 97%; Charleston Consolidated Electric 5s, 97; Macon Railway & Light 5s, 101 1/4; Milwaukee refunding 4 1/2s, 94; Georgia & Alabama consolidated 5s, 107 1/4; Raleigh & Gaston 5s, 100 to 108 1/4; Coal & Iron Railway 5s, 101 1/4; Northern Central Railway stock, 127; Virginia Railway & Power common, 42 1/2 to 44; Macon, Dublin & Savannah 5s, 101; Seaboard & Roanoke 5s, 105 1/4; City & Suburban (Baltimore) 5s, 105 1/4; Maryland 3s, 1914, 97 1/2; Petersburg B, 117; Maryland Club 4 1/2s, 97; Southern Railway development 4s, 79 1/4; United States Steel common, 66 1/2 to 66 3/4; Coal & Coke Railway 5s, 95; Fort Wayne & Wabash Valley Terminal 5s, 86; Baltimore City 4s, 1961, 101 1/4; Northern Central 5s B, 111 1/2.

### SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended January 10, 1912.

Railroad Stocks.		Par.	Bid.	Asked.
Atlantic Coast of Conn.	100	250	262	
Fairmont & Clarks Trac. Pfd.	100	82	85	
Georgia Sou. & Fla. 1st Pfd.	100	94 1/2		
Georgia Sou. & Fla. 2d Pfd.	100	70		
Maryland & Pennsylvania	100	28 1/2	33	
Norfolk Railway & Light	100	25	26	
Seaboard Co. Common	100	25		
Seaboard Co. 2d Pfd.	100	63 1/2	64 1/2	
Southern Railway	100	28 1/2		
United Rys. & Elec. Co.	50	18 1/2	19	
Western Maryland Pfd.	50	75 1/2		
Virginia Railway & Power	100	43	43 1/2	
Bank Stocks.				
Bank of Baltimore	100	164 1/2	166	
Bank of Commerce	100	30	31	
Citizens	100	40	40	
Farmers & Merchants	100	50	52	
First National	100	108		
German	100	108		
German-American	100	107 1/2		
Marine	100	30	43	
Mechanics	100	29 1/2	29 1/2	
Merchants	100	185		
Union	100	133 1/2	136	
Trust, Fidelity and Casualty Stocks.				
American Bonding	25	79		
Baltimore Trust	100	164 1/2	165 1/2	
Continental Trust	100	225		
Fidelity & Deposit	50	149 1/2	151	
Fidelity Trust	100	219		
Maryland Trust	100	91	95	
Maryland Trust Pfd.	100	115		
Mercantile Trust & Deposit	50	147	148 1/2	
U. S. Fidelity & Guaranty	100	179 1/2	181	
Miscellaneous Stocks.				
Baltimore Brick	100	1		
Baltimore Brick Pfd.	100	25	28	
Baltimore Electric Pfd.	100		41	
Con. Gas, Elec. Lt. & P. Com.	100	97		
Con. Gas, Elec. Lt. & P. Pfd.	100	102	102 1/2	
Consolidation Coal	100	100 1/2	101	
G. B. S. Brewing Co.	100			
Mer. & Miners' Trans. Co. V. T. 100	68	72		
Railroad Bonds.				
Atlanta & Birmingham 4s	87	90		
Atlantic Coast 1st 4s	95	96		
Atlantic Coast Conv. Deben. 4s	101 1/2	101 1/2		
At. Coast (Conn.) 4s, 5-20s	90	91 1/2		
Atlantic Coast (Conn.) 5s, Cfs.	100	106 1/2		
Atlantic Coast 4s, Cfs.	82			
Atlantic Coast Lt. & N. C. Tr. 4s	97	95		
Balto. & Harrisburg Ext. 5s	103 1/2	93		
Carolina Central 4s	93	93 1/2		
Charleston & West. Car. 5s	106 1/2	106 1/2		
Coal & Coke Railway 5s	101	101 1/2		
Coal & Iron Railway 5s	101	101 1/2		
Georgia & Alabama 5s	107 1/2	107 1/2		
Georgia & Florida 5s	78			
Georgia Southern & Fla. 1st 5s	107 1/2			
Macon, Dublin & Savannah 5s	100 1/2	101 1/2		
Maryland & Pennsylvania 4s	89 1/2	89 1/2		
Petersburg Class B 5s	116	117 1/2		
Potomac Valley 1st 5s	108	109 1/2		
Raleigh & Gaston 5s	108 1/2	109		
Seaboard 4s, Stamped	89 1/2	90		
Seaboard Adjustment 5s	84	84 1/2		
Seaboard Refunding 4s	83 1/2	84 1/2		
Seaboard & Roanoke 5s	106 1/2	106 1/2		
South Bound 5s	107 1/2			
Southern Railway Dev. 4s	78 1/2	79 1/2		
Suffolk & Carolina 5s	102 1/2	108		
Virginia Midland G. M. 5s	108			
Washington Term. 3 1/2s	87 1/2			
Williamson & Weldon 5s	110 1/2	112		
Street Railway Bonds.				
Anacostia & Potomac 5s	101			
Augusta Railway & Electric 5s	103 1/2			
Baltimore, Sp. Pt. & C. 4 1/2s	96	96 1/2		
Baltimore Traction 1st 5s	107 1/2			
Baltimore Traction (N. B.) 5s	110			
Charleston City Railway 5s	104 1/2			
Charleston Con. Elec. 5s	96 1/2	97		
City & Suburban 5s (Balto.)	106	106 1/2		
Fairmont & Clarkaburg Trac. 5s	100	100 1/2		
Knoxville Traction 5s	105			
Lake Roland Elevated 5s	108 1/2			
Lexington Railway 1st 5s	95	96 1/2		
Macon Railway & Light 5s	101	102		
Maryland Electric Railway 5s	98 1/2			
Memphis Street Railway 5s	98 1/2			
Newport News & Old Point 5s	89	92 1/2		
Newport News & O. P. G. M. 5s	65			
Norfolk & Portsmouth Trac. 5s	89			
Norfolk Railway & Light 5s	99 1/2	100		
United Railways 1st 4s	85	85 1/2		
United Railways Income 4s	62	62 1/2		
United Railways Funding 5s	86	86 1/2		
United Railways Notes 5s	99 1/2			
Virginia R. & P. 5s	96 1/2	96 1/2		
Miscellaneous Bonds.				
Baltimore Brick 5s	83 1/2	85		
Baltimore Electric 5s, Stp.	96			

Belvedere Hotel 5s..... 100  
Consolidated Gas 5s..... 109  
Consolidated Gas 4 1/2s..... 97  
Con. Gas, Elec. Lt. & P. 4 1/2s..... 98 1/2  
Consolidation Coal Ref. 4 1/2s..... 92  
Consolidation Coal Ref. 5s..... 94  
G. B. S. Brewing 1st 4s..... 36  
G. B. S. Brewing Income 5s..... 3 1/2  
Mt. Vernon-Woodby Cot. Duck 5s..... 77 1/2  
United Elec. Lt. & P. 4 1/2s..... 93

### SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending January 8.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	75	
Alken Mfg. Co. (S. C.)	80	
American Spinning Co. (S. C.)	160	
Anderson Cotton Mills (S. C.)	48	
Anderson Cot. Mills (S. C.) Pfd.	100	
Arcadia Mills (S. C.)	92	
Arkwright Cotton Mills (S. C.)	99	
Belton Mills (S. C.)	108	
Brandon Mills (S. C.)	90	
Brogan Mills (S. C.)	90	
Chiquola Mfg. Co. (S. C.)	170	
Clifton Mfg. Co. (S. C.) Pfd.	97	
Clinton Cotton Mills (S. C.)	120	
Courtenay Mfg. Co. (S. C.)	100	
Dallas Mfg. Co. (S. C.)	92	
Darlington Mfg. Co. (S. C.)	90	
D. E. Converse Co. (S. C.)	90	
Drayton Mills (S. C.)	95	
Eagle & Phenix Mills (Ga.)	117	
Easley Cotton Mills (S. C.)	123	
Enoree Mfg. Co. (S. C.)	60	
Enoree Mfg. Co. (S. C.) Pfd.	94	
Gaffney Mfg. Co. (S. C.)	87	
Gainesville Cotton Mills (Ga.)	72	
Glenwood Cotton Mills (S. C.)	120	
Graniteville Mfg. Co. (S. C.)	140	
Greenwood Cotton Mills (S. C.)	67	
Grendel Mills (S. C.)	90	
Hartsville Cotton Mill (S. C.)	160	
Henrietta Mills (N. C.)	100	
Jones Mills (S. C.)	100	
King Mfg. Co. J. P. (Ga.)	80	
Lancaster Cotton Mills (S. C.)	130	
Lancaster Cot. Mills (S. C.) Pfd.	97	
Langley Mfg. Co. (S. C.)	104	
Laurens Mills (S. C.)	120	
Limestone Mills (S. C.)	150	
Lockhart Mills (S. C.)	65	
Lockhart Mills (S. C.) Pfd.	90	
Lory Cotton Mills (N. C.) Pfd.	90	
Marlboro Cotton Mills (S. C.)	90	
Mills Mfg. Co. (S. C.)	102	
Mollobon Mfg. Co. (S. C.)	95	
Monaghan Mills (S. C.)	100	
Monarch Cotton Mills (S. C.)	105	
Newberry Cotton Mills (S. C.)	125	
Ninety-Six Cotton Mills (S. C.)	130	
Norris Cotton Mills (S. C.)	131	
Olyria Cotton Mills (S. C.)	130	
Orr Cotton Mills (S. C.)	90	
Pacolet Mfg. Co. (S. C.)	90	
Pacolet Mfg. Co. (S. C.) Pfd.	95	
Parker Common	25	
Parker Preferred	65	
Pelzer Mfg. Co. (S. C.)	163	
Piedmont Mfg. Co. (S. C.)	175	
Poe Mfg. Co. F. W. (S. C.)	110	
Saxon Mills (S. C.)	115	
Spartan Mills (S. C.)	120	
Wing Mfg. Co. (Ga.)	120	
Tucapau Mills (S. C.)	800	
Union-Buffalo (S. C.) 1st Pfd.	90	
Union-Buffalo (S. C.) 2d Pfd.	15	
Victor Mfg. Co. (S. C.)	110	
Warren Mfg. Co. (S. C.)	90	
Warren Mfg. Co. (S. C.) Pfd.	100	
Washington Mills (Va.)	25	
Washington Mills (Va.) Pfd.	106	
Whitney Mfg. Co. (S. C.)	110	
Winchester Mills (N. C.)	136	
Woodruff Cotton Mills (S. C.)	106	
Woodside Cotton Mills (S. C.)	100	
Watts Mills (S. C.)	70	
Williamston Mills (S. C.)	120	

### German Savings Bank.

The annual report of the German Savings Bank of Baltimore shows funds on hand December 31, 1910, \$4,335,293.80; received from depositors during 1911, \$2,084,112.05, also interest, dividends on securities, loans, etc., bringing the total up to \$6,637,273.84; paid depositors during 1911, including interest, \$2,039,152.65, also expenses, taxes, etc., leaving funds on hand December 31, 1911, \$4,543,905.60. The bank owns bonds and stocks of a book value of \$3,317,435.36. It also has loans on collateral of more than \$200,000 and loans on mortgage of nearly three quarters of a million. Amount due depositors, including interest at 3 1/2 per cent. credited January 1, 1912, is \$4,363,962.93. The guarantee fund and undivided surplus is \$180,032.67. Number of accounts, 8079. Charles Spilman is president, and William Spilman, treasurer.

### Mercantile Trust Statement.

The Mercantile Trust & Deposit Co. of Baltimore, Md., reports at close of business December 30, 1911, total resources, \$14,975,352; Baltimore city stock, \$2,508,227; other stock and bonds, \$4,190,509; loans on approved collateral—time and call—\$5,703,490; cash in hand and in banks, \$1,409,960; capital stock, \$1,500,000; surplus, \$2,700,000; undivided profits, \$430,782; deposits, \$10,344,570. A. H. S. Post is president; Wilton Snowden,

vice-president; J. R. Walker, second vice-president; John McHenry, treasurer; T. H. Fitchett, secretary and assistant treasurer; C. I. Reynolds, assistant secretary.

### Central Savings Bank.

The Central Savings Bank of Baltimore reports at close of business December 31, 1911, funds on hand \$10,513,359.45, an increase from \$9,887,115.92 a year ago; the amount received from depositors during the year \$3,711,778.48, and there was paid to depositors, including interest \$3,457,968.95. The assets of the bank amount to a ledger value of \$10,513,359.45, and market value of \$10,697,105.70. Accounts opened at the end of the year numbered 21,566, as compared with 21,224 a year ago. Robert K. Waring is president and J. Wilson Cole treasurer.

The date for receiving bids for the \$10,000 of 5 per cent. bonds at Beaufort, N. C., has been changed from January 11 to January 25 at 8 P. M. Further particulars will be found in the advertising columns.

### FINANCIAL CORPORATIONS.

Ala., Anniston.—The City Bank & Trust Co., according to press dispatch, is to be organized with \$100,000 capital to take over the business of the City Bank & Trust Co.

Ala., Autaugaville.—The Citizens' Bank will, it is reported, begin business about February 15 with L. D. Hick, president; W. L. De Bardeleben, vice-president; C. D. Smith, cashier.

Ala., Birmingham.—Official: American Mortgage & Loan Co. incorporated; capital \$1,000,000; began business January 1. J. A. Gorham is president; Alan Jamison, secretary; R. H. Wood, assistant secretary, and A. D. Smith, first vice-president. Other directors are H. E. McCormack, E. M. Kilby, O. C. Turner, Ernest Redd, J. I. McCants, R. L. Seals, L. J. Haley, Hugh Morrow, R. B. Watts, G. T. Brazelton, Griffin Lamkin, L. K. Mackey and T. P. West.

Ala., Fort Deposit.—Reported that a new bank is being organized by local business men and farmers of Lowndes county.

Ala., Orrville.—The Orrville Bank & Trust Co., capital \$25,000, surplus \$10,000, is reported to have begun business. J. E. Dunnaway is president and T. F. Ormond cashier.

Ark., Arkansas City.—William Hardy and others of Eldorado, Ark., are reported to have organized a bank with \$50,000 capital for Arkansas City. J. L. Parker is president; Abe Driedel, vice-president; Ed Doran, J. E. Murphy and W. M. Hardy, directors. Charter is obtained and the bank will begin business March 1.

Ark., England.—J. E. Hicks says that the Citizens' Bank has been organizing and charter is granted, but it will not begin business before February 1. Has bought building and fixtures of the Merchants and Planters' Bank. He will be president and J. R. England cashier.

Ark., Hope.—Hempstead County Abstract & Guaranty Co. of Hope incorporated; capital \$5000; incorporators, A. W. Estes, M. A. Hathcoat and E. L. Carter.

D. C., Washington.—J. Selwin Tait is reported organizing a new bank.

D. C., Washington.—The Continental Trust Co. is to make application for a charter; incorporators, Nathan B. Scott, Benjamin L. Dulaney, Thomas Somerville, W. T. Gallier, Bates Warren, B. W. Petersen, Charles W. Warden, John C. Scofield, Charles M. Warner, William G. Carter, G. A. Landmesser, C. B. Hart, Joseph Strassburger, Allan E. Walker, James L. Karrick, Colin H. Livingstone, Capt. G. T. Scott, Paul Dulaney, F. H. Edmonds, Gen. Morris Horkheimer and others.

D. C., Washington.—The Washington Savings & Loan Co., capital \$50,000, is reported organized by Max Perskin, Marcus Korman and Hyman Dodek.

Ark., Mammoth Springs.—The Fulton County Bank, according to press dispatches, has begun business with \$10,000 capital. Officers: President, B. F. Elder; vice-president, J. J. Sampson, and cashier, C. C. Presley.

Ga., Atlanta.—The People's Health & Accident Insurance Co., a mutual life concern, has applied for charter; no capital stock; incorporators, W. Bayne Gibson of De Kalb county, Georgia; Andrew B. Chapman, Edward H. Barnett, W. Ott Alston and Emmett Michell, all of Atlanta.

Ga., Dublin.—A loan and realty company with \$25,000 capital stock is reported organized and application made for incorporation. Stockholders are S. J. Lord, J. M. Finn, C. W. Brantley, Sam Bashinski, C. W. Brant-

ley, Jr., T. B. Brantley, J. S. Simons, Jr., H. A. Knight and W. W. Bush.

Ga., Lyons.—The Farmers and Merchants' Bank, according to press dispatches, expects to begin business in about 30 days with B. B. Newton, president; W. C. Oliver, vice-president, and Levy Thompson, cashier.

Ga., Macon.—People's Bank & Trust Co., capital \$50,000, has applied for charter; incorporators, Lee M. Happ, Wm. C. Miller and C. B. Lewis, all of Macon.

Ga., Savannah.—Fidelity Realty Co., authorized capital \$6000 to \$100,000, has applied for charter; incorporators, George A. Mercer, William F. McCauley and A. J. Garfunkel.

Ky., Jackson.—The First National Bank of Jackson, capital \$100,000, will, it is reported, be formed by the consolidation of the present First National, the Jackson Deposit, the Breathitt County and the Hargis Commercial banks, all of Jackson. There will also be a trust company in connection with \$50,000 capital. Those interested are said to be J. C. C. Mayo, Floyd Day and Joseph Head of Ashland, Ky.; J. W. Williams of Abingdon, Va.; J. H. Letton, Jr., J. T. Hindman, M. P. Davis and others of Jackson, Ky.

Ky., Lexington.—The Bank of Commerce, recently incorporated with \$100,000 capital, is reported to have begun business. I. W. Mantle is president; O. D. Randolph and J. W. Richardson, vice-presidents, and F. G. Stiltz, cashier.

La., Abbeville.—The People's Bank & Trust Co. is reported to have begun business; capital \$50,000. E. M. Stebbins is president; P. U. Broussard, vice-president; J. Camille Broussard, cashier.

La., Crowley.—The Crowley Bank & Trust Co. has published its charter; capital \$50,000; directors, P. S. Lovell, W. E. Ellis, W. J. Carmouche, John Green and H. M. Bone.

La., Gueydan.—The People's Bank & Trust Co. is reported to have begun business; president, E. M. Stebbins; vice-president, H. N. Hair; cashier, R. J. Richardson; assistant cashier, Arthur Le Jeune. Other directors are W. L. Ross, C. E. Phillips and Caesar Ceaux.

La., Gueydan.—Reported that the People's Bank & Trust Co. of Abbeville, La., will open a branch at Gueydan.

La., Mamou.—Reported that the Evangeline Banking & Trust Co. of Ville Platte will establish a branch at Mamou.

La., Shreveport.—The Herndon-Jeter Company, capital \$50,000, has made application for a charter to conduct a general insurance agency, buy and sell real estate, etc.; James R. Herndon, president; J. Warrie Jeter, Jr., vice-president; Lewis P. Ducourneau, secretary; E. Fred Savage, treasurer, and Cecil C. Herndon.

La., Ville Platte.—The Evangeline Banking & Trust Co., capital \$50,000, successor to the Ville Platte Bank, has begun business with the same officers, including E. A. Plaque of Marksville, La. Branches elsewhere may be established.

Md., Baltimore.—Mutual Help Building and Loan Association, No. 2, incorporated; capital stock \$50,000; incorporators, Frederick H. Lohmeyer, Frederick C. Meyer and Geo. F. Faust.

Md., Baltimore.—The Tuxedo Permanent Building Association incorporated; capital \$250,000; incorporators, Harry Silberstein, Adolph I. Mathanson and Israel B. Brodie.

Md., Baltimore.—The Servian-Kroatan Savings and Loan Association incorporated; capital \$5000; incorporators, Emrich Beck, Trisa Markowitz and George Davidovitz.



**Established 1888**  
**The Merchants National Bank**  
 South and Water Sts., BALTIMORE, MD.  
 DOUGLAS H. THOMAS, President.  
 WM. INGLE, Vice-Pres. and Cashier.  
 J. C. WANDS, Asst. Cashier.  
 JOHN B. H. DUNN, Asst. Cashier.  
 Capital \$1,500,000  
 Surplus and Profits \$900,000  
 Deposits \$12,000,000  
 Accounts of Banks, Bankers, Corporations  
 and Individuals solicited. We invite corre-  
 spondence.

**THE FIRST NATIONAL BANK**  
 OF KEY WEST, FLA.  
 United States Depository and Disbursing  
 Agent.  
 Capital - - - - - \$100,000  
 Surplus and Undivided Profits - \$40,000  
 A general banking business transacted.  
 Special attention given to collections.

**IF**  
 your local financial institution cannot supply  
 your needs, consult this bank regarding the re-  
 quired additional facilities.  
**FIRST NATIONAL BANK**  
 RICHMOND, VA.  
 JNO. B. PURCELL, President.  
 JNO. M. MILLER, Jr., Vice-Pres. & Cashier.  
 Assets over \$11,000,000.00

**INVESTMENT SECURITIES**  
 Southern Steaks and Bonds  
 Municipal and Corporation  
 Cotten Mill Steaks a Specialty  
**WM. S. GLENN, Broker - SPARTANBURG, S. C.**

**Delaware Trust Company**  
 WILMINGTON, DELAWARE  
 INCORPORATING under broad, liberal, safe  
 and stable Delaware laws. A fully equipped  
 department for proper organization and re-  
 gistration of corporations.  
 BANKING AND TRUST department gives  
 special attention to out of town customers' accounts.  
 TITLE DEPARTMENT examines and gauran-  
 tees title to realty throughout Delaware.  
 REALTY DEPARTMENT has sites for manu-  
 facturing industries. Modern Methods of  
 management of property.  
 EDWARD T. CANBY, President.  
 J. ERNEST SMITH, V.-Pres. and Gen. Counsel.  
 WM. G. TAYLOR, Treasurer.  
 HARRY W. DAVIS, Secretary.  
 W. W. FURBY, 2d Title and Real Estate Officer.

H. B. Wilcox, President. Blanchard Randall, V.-Pres.  
 Wm. S. Hammond, Cashier.  
 Saml. W. Tschudi A. Cash. R. E. Bolling, A. Cash.  
**The First National Bank**  
 17 South St., Baltimore, Md.  
 Capital - - - - - \$1,000,000  
 Surplus and Net Profits - - - 400,000  
 Deposits - - - - - 5,500,000  
 Especially well equipped to handle the business  
 of Southern Banks, Corporations, and Individu-  
 als and Manufacturers. We cordially invite  
 correspondence and interviews.

**The National Exchange Bank**  
 OF BALTIMORE, MD.  
 Hopkins Place, German and Liberty Sts  
 Capital \$1,000,000  
 July 15, 1908, Surplus and Profits \$671,631.60  
**OFFICERS:**  
 WALDO NEWCOMER, President.  
 SUMMERFIELD BALDWIN, Vice-Pres.  
 R. VINTON LANSDALE, Cashier.  
 C. G. MORGAN, Asst. Cashier.  
 Accounts of Mercantile Firms, Corporations,  
 Banks, Bankers and Individuals Invited.

**JOHN NUVEEN & CO.**  
 1st. Nat. Bank Bldg., CHICAGO  
 We purchase SCHOOL, COUNTY and MU-  
 NICIPAL BONDS. Southern Municipal  
 Bonds a Specialty.  
 Write us if you have bonds for sale.

**Guaranty State Bank & Trust Co.**  
 DALLAS, TEXAS  
 Capital, - - - - - \$400,000.00  
 Surplus and Profits, - - - 50,000.00  
 Deposits, - - - - - 2,500,000.00  
 Largest State Bank in Texas. A General  
 Banking and Trust Business. Ask us about our  
 6% Real Estate Mortgages.

**Southern Steam**  
**Railroad Securities**  
 DEALT IN  
**F. J. LISMAN & CO.**  
 Specialists in Steam R. R. Securities  
 Members New York Stock Exchange,  
 30 Broad Street NEW YORK  
 29 Pearl Street, Hartford.  
 Land Title & Trust Bldg., Philadelphia.

**CAPITAL AND SURPLUS - - - - - \$3,500,000**  
**THE BALTIMORE TRUST CO.**  
 BALTIMORE, MD.  
 Solicits Accounts of Banks, Bankers Corporations, and Individuals.  
 Interest Allowed on Deposits Subject to Check.  
 Special Rates Made on Time Deposits.  
**OFFICERS**  
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**POWHATAN WYNDHAM ROBERTSON, President**  
 YOUR BUSINESS SOLICITED CERTIFIED PUBLIC ACCOUNTANT

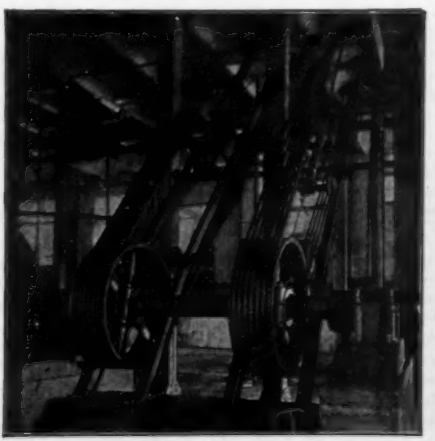
**WE BUY City, County, School and Drainage BONDS**  
 FROM MUNICIPALITIES OR CONTRACTORS  
 We are in position to pay HIGHEST PRICES. Write or wire us your offerings.  
**THE NEW FIRST NATIONAL BANK, Assets, \$5,000,000 Columbus, Ohio**  
 JOHN C. SHORT, of New York, President EDWARD A. OLDHAM, of North Carolina, Vice-Pres.  
**NEW YORK BOND & FINANCE COMPANY**  
 Established 1878 Successor to John C. Short & Son Incorporated 1911  
 INVESTMENT BROKERS AND FINANCIAL AGENTS  
 51 LIBERTY STREET, NEW YORK  
 Investment securities bought, sold or exchanged for other securities. Loans procured for Rail-  
 roads, Industrial and other corporations.  
 Special attention given to securities issued for development or extension purposes in the SOUTH.

**We Finance**  
 Electric Light, Power and Street Railway Enterprises  
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vice-president; Chas. A. Rose, cashier; Mabel Fly, assistant cashier.

Mo., St. Louis.—The North Side Savings and Loan Association, capital \$100,000, is reported to have filed articles of incorporation. Incorporators: Charles Mueller, John C. Greulich, William Kassebaum, Richard Weisenborn, John H. Puerer, H. L. Hackney, Herman Krone, Fred C. Aufderheide, Henry Broder, Minnie J. Greulich, Anna Puerer, Harry Humber, William H. Beermann, Walter N. Fisher, Richard F. Horn, W. H. Roevekamp, N. A. Mueller, F. J. C. Greulich, Henry Holtman, Louis H. Lempe, Frederick Schrieber, Herman J. Puerer, Frederick Puerer, Lulu Woods and Harry Herman.

Mo., St. Louis.—The Mortgage & Share Co. is reported organized with \$50,000 capital. Application will be made for charter. The stockholders include Sidney Bixby, president; Archer W. Douglas, vice-president and treasurer; W. K. Bixby, August A. Busch, Chas. A. Lomp, Alonzo C. Church, H. L. Block, G. H. Walker, W. B. Dean, Jr., and J. H. Wear of St. Louis and Alonzo Potter of New York.

N. C., Catawba.—The Bank of Catawba is reported to have begun business with J. H. Pitts president and W. B. Walker cashier.

N. C., Charlotte.—The Salkers Bank & Trust Co., lately chartered, has secured quarters in the Wittkowsky Bldg. and will begin business soon; authorized capital from \$25,000 to \$50,000, but may begin business with \$12,500; incorporators, H. M. Wade, L. L. Caudle, H. P. Dew, W. M. Tye and T. J. Gattis.

Okla., Grove.—Reported approved: The First National Bank of Grove; capital \$25,000; J. E. Kelley, president; Nat M. Perry, vice-president; T. H. Thompson, cashier, and N. W. Johnson, assistant cashier. This is a conversion of the Bank of Grove.

Okla., Guthrie.—A new State bank to take the place of the National Bank of Commerce, which was recently merged with the Guthrie National Bank, is reported contemplated. It will have \$50,000 capital, and Joseph McNeal, it is said, will be president.

Okla., Oklahoma City.—Reported chartered: The Pacific Investment Co., capital \$10,000, is reported incorporated by F. H. Foster, J. S. Patrick and C. C. Poffinger.

Okla., Stuart.—Chartered: Stuart State Bank; capital \$10,000; incorporators, J. C. Forrester, G. A. Forrester and J. C. Holman of Stuart, and L. T. Sammons of Holdenville.

S. C., Columbia.—Official: Independent Building and Loan Association chartered; capital \$200,000; president, Ernest M. Du Pre; vice-president, W. P. Hamrick; secretary and treasurer, Jesse T. Reese; solicitor, Edward L. Craig. Other directors are J. B. Penland, J. D. Miot, F. D. Marshall, E. G. Cook and J. C. Copeland.

S. C., Greenville.—The Co-operative Investment Co. is reported chartered; capital \$10,000. Officers: J. E. Shirine, president; Geo. Wrigley, vice-president; S. R. Riley, secretary and treasurer.

S. C., Orangeburg.—The Orangeburg Trust

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Co. is reported chartered; capital \$1500; J. A. Berry, president, secretary and treasurer, and W. C. Wolfe, vice-president.

S. C., Winnsboro.—Official: The Catawba Loan Co. chartered; capital \$30,000. Directors: J. J. Obeart, president; D. V. Walker, Jr., vice-president; F. A. DesPortes, vice-president; D. S. Ellison, secretary and treasurer; C. W. McCants, attorney. Business is to begin January 10.

Tenn., Dickson.—The Dickson State Bank is reported organized to begin business January 15; capital \$40,000. Thomas Hallbrook is president; D. F. Bensley, vice-president; Oury Harris, cashier, and W. T. Holland, assistant cashier.

Tenn., Soddy.—A new bank is reported organized with C. W. Abel president, T. H. McKown vice-president, C. C. Jones cashier; directors, H. M. Bowling, N. E. Colbeigh, W. L. Templeton, Sam L. Byrd, Prof. James A. Roberts, Prof. T. J. Welch and J. B. F. Lowry, cashier of the Citizens' National Bank of Chattanooga.

Tenn., White's Creek.—Reported chartered: The White's Creek Bank & Trust Co.; capital \$10,000; J. B. White, N. P. LeSueur, J. H. Zarecor and R. D. Marshall, incorporators.

Tex., Dallas.—C. L. Wakefield, president of the Republic Surety, Fidelity & Trust Co., recently reported incorporated with authorized capital of \$5,000,000, sends prospectus saying that it will handle first mortgage or vendors' lien loans; it will also deal in municipal, school and county bond issues and other securities, but will not undertake the banking business. It will act as intermediary between borrowers and lenders; executive offices, 810-11-12 Wilson Bldg. Spence, Knight, Baker & Harris are counsellors for the company.

Tex., Larue.—The Citizens' State Bank of Larue is reported licensed to begin business.

Tex., San Antonio.—The Groos National Bank, capital \$250,000, is reported being organized with directors thus: Franz C. Groos, San Antonio, Tex.; F. Groos, C. Duessen, I. S. Kampmann and C. H. Kearny.

Tex., Springtown.—First State Bank of Springtown is chartered; capital \$15,000; president, J. F. Ward; cashier, J. D. Hutcheson.

Tex., Waco.—The Brazos Valley Trust Co., capital \$500,000, is about to make application for a charter. Directors: F. M. Gardner, Waco; H. O. Boatwright, Bryan; I. A. Goldstein, Waco; T. F. Bush and others.

Va., Norfolk.—The Bond-Mortgage Securities Co. incorporated. Capital \$15,000 to \$100,000. R. W. Gamble, president; R. C. Taylor, Jr., vice-president, and J. A. Goodwyn, secretary.

Va., Richmond.—Official: The Richmond Bank & Trust Co., 11th and Main Sts., incorporated. Capital \$300,000. Business began January 2 with H. R. Pollard, Jr., president; W. J. Whitehurst, vice-president; S. T. Beveridge, vice-president; Clinton L. Williams, cashier; directors, William H. Adams, John Bagby, S. T. Beveridge, Joseph P. Brady, Wilson Miles Cary, Edgar H. Ferguson, W. S. Forbes, W. J. Gilman, Raphael Levy, Hill Montague, Richmond Moore, H. R. Pollard, Jr., Maurice A. Powers, W. Conway Saunders, John L. Satterfield, T. C. Walford, H. S. Wallerstein, W. B. West, W. J. Whitehurst, John T. Wilson.

W. Va., Weirton.—The Bank of Weirton, it is reported, has begun business. E. T. Weir is president; Cyrus Ferguson, vice-president, and D. M. Peterson, cashier.

#### NEW SECURITIES.

Ala., Cullman.—An election is to be held in Cullman county, according to press dispatches, to vote on \$350,000 of pike bonds.

Ala., Greensboro.—February 6, it is reported, an election is to be held in Hale county to vote on \$100,000 of 30-year road bonds.

Ala., Mobile.—The Board of Education of Mobile county is reported considering the question of issuing school bonds.

Ala., Mobile.—The question of issuing \$300,000 of school bonds is, according to press dispatches, under consideration.

Ark., Argenta.—The W. R. Compton Bonding Co. of St. Louis is reported making an offer to the School Board to take bonds up to \$75,000 in amount and to issue new bonds for those outstanding (\$16,000) for the new high school to be built. Action deferred.

Fla., Madison.—Reported voted: \$50,000 of water and light plant purchase bonds.

Ga., Americus.—An election is to be held, it is reported, to vote on \$60,000 of electric-light bonds.

Ga., Bronwood.—J. B. McCrary & Co. of Atlanta are reported to have bought at 100.40

the \$10,000 of 6 per cent. water bonds voted November 1.

Ga., Camilla.—John W. Dickey of Augusta, Ga., is reported to have purchased at 103.3 the \$20,000 of 5½ per cent. 29½-year bonds.

Ga., Dublin.—The election for \$300,000 of road-improvement bonds set for January 9 is again reported indefinitely postponed. Fifty thousand dollars of bonds for an agricultural and mechanical school were also to be voted upon. It is understood that a vote will not be taken until definite announcement is made as to the plans for expending the proceeds. F. G. Corker, J. R. Rivers and J. L. Keen are the bond commissioners.

Ga., Lincolnton.—Reported defeated: \$30,000 of Lincoln county courthouse bonds.

Ga., Quitman.—Official: January 16 an election is to be held to vote on \$40,000 of school building, \$23,000 of paving and \$12,000 of fire department ½ per cent. 25-year bonds; denomination \$1000. Jos. D. Wilson is Mayor.

Ga., Rockmart.—John W. Dickey of Augusta is reported to have purchased \$35,000 of water and sewer bonds at 98.50.

Ky., Lexington.—Street-improvement bonds to the amount of \$10,128.22, bearing 6 per cent. interest and dated November 15, 1911, will be offered at public auction January 13 by J. E. Cassidy, Mayor.

La., Columbia.—Official: S. A. Kean & Co. of Chicago were awarded at par, less \$32.50, the \$12,500 of 5 per cent. school bonds, maturing in three years; denomination \$250. E. H. Turner, secretary, is officer in charge.

La., Lake Charles.—Hoehler & Cummings of Toledo, O., are reported to have bought the \$140,000 of school bonds at par and accrued interest, the city paying \$200 for cost of bonds, attorney fees, etc.

La., New Orleans.—Notice is given that bids will be received until noon January 9 for \$5000 of floating debt bonds. Denomination \$1000. Address T. Wolfe, Jr., Secretary Board of Liquidation, City Debt.

La., Thibodaux.—January 11, it is reported, an election is to be held to vote on school district bonds.

Md., Cumberland.—The road directors of Allegany county are reported seeking authority to issue bonds.

Miss., Aberdeen.—\$50,000 of good-roads bonds for the First District of the county will be offered for sale at the February meeting of the Supervisors. A. C. Lowe is president of the board.

Miss., Biloxi.—The \$70,000 of water-works bonds are reported awarded to Harry T. Howard of New Orleans and Biloxi at par, less brokerage.

Miss., Georgetown.—The Georgetown Bank is reported to have purchased at par \$5000 of school bonds.

Miss., Vicksburg.—Official: Voted: School bonds.

Mo., Boonville.—Official: A. G. Edwards & Sons, St. Louis, purchased at par on December 15 the \$100,000 of 4 per cent. Cooper county courthouse bonds; denomination \$500; dated January 1, 1912; maturity January 1, 1932. Charles Durr is treasurer.

Mo., California.—The Farmers and Traders' Bank of California, Mo., says a report, purchased the \$15,000 of 5 per cent. 20-year sewer bonds at 102, or a basis of 5.856 per cent.

Mo., Jefferson City.—Reported that the \$70,000 of improvement bonds recently voted will soon be offered for sale.

Mo., Jefferson City.—Bids for the \$3,500,000 of 3½ per cent. State Capitol bonds will, it is now stated, be opened January 23.

Mo., Kansas City.—\$415,000 of 4½ per cent. 20-year 12th St. trafficway bonds are reported sold to Kountze Bros. of New York at 104.877 (\$435,285) and interest.

Mo., Marble Hill.—Bids will be received until noon February 7 for \$8000 of 6 per cent. Bollinger county courthouse bonds. Address Melvin Lates, County Treasurer.

Mo., Oregon.—Official: The Wm. R. Compton Company, St. Louis, Mo., purchased at 105 the \$100,000 of 5 per cent. 5-30-year light and water-extension bonds; denomination \$500; dated July 1, 1911.

Mo., Paris.—John Nickerson, Jr., of St. Louis, is reported to have been awarded \$100,000 of 4 per cent. Monroe county courthouse bonds at par plus \$1343, less \$5000 for expenses, making the net price \$96,343.

N. C., Black Mountain.—Northern bankers are reported to have recently purchased \$15,000 of water bonds voted last April.

N. C., Charlotte.—Plans are reported being made to issue \$112,000 of street improvement 6 per cent. bonds. Address E. W. Thompson, chairman finance committee.

N. C., Dover.—Official: Bids will be re-

ceived until noon February 15 for \$15,000 of 6 per cent. Mosely Creek Drainage District bonds; denomination to suit purchaser. Address president Mosely Creek Drainage District.

Okla., Chandler.—Reported that no bids were received December 20 for the \$642,000 of 6 per cent. drainage bonds of Deep Fork District, Lincoln county, but that the bonds will be taken by contractors for work.

Okla., Dustin.—Reported sold: \$25,000 of 6 per cent. 25-year water bonds.

Okla., Oklahoma City.—Bids are being received, it is reported, for \$118,000 of 5 per cent. school funding bonds. G. A. Ellow is secretary of the Board of Education.

Okla., Oklahoma City.—An issue of capital and park bonds is proposed and is under discussion.

Okla., Oklahoma City.—The question of holding an election to vote on \$250,000 of bonds is reported under consideration.

Okla., Pawhuska.—The Oklahoma State Bank of Oklahoma City bought the \$50,000 of 6 per cent. 10-25-year road bonds of Strike-Axe township at 101.142 and the blank bonds.

Tenn., Blountville.—\$20,000 of road bonds are reported voted by this (Sullivan) county.

Tenn., Bristol.—Reported voted: \$200,000 of Sullivan county pike bonds.

Tenn., Charlotte.—February 17, it is reported, an election is to be held to vote on \$100,000 of 4 per cent. 30-year Dickson county road bonds.

Tenn., Chattanooga.—The new courthouse commission, it is reported, will soon invite bids for the building bond issue.

Tenn., Gallatin.—Steps are reported being taken to sell \$200,000 of bonds.

Tenn., Hohenwald.—Reported voted: \$10,000 of Lewis county school bonds.

Tenn., Knoxville.—Official: The Knoxville Banking Co. has been awarded at par, accrued interest and \$40 premium the \$15,000 of 6 per cent. short-term street-improvement bonds; denomination \$500. S. R. Rambo is chairman of finance committee and official in charge.

Tenn., Livingston.—February 23, it is reported, an election is to be held in Overton county to vote on \$150,000 of road bonds.

Tenn., Madisonville.—According to press dispatches, \$150,000 of Monroe county road bonds are to be issued.

Tenn., Sparta.—An election, it is reported, will be held January 27 on \$90,000 of turnpike bonds for White county.

Tenn., Waverly.—The \$10,000 of 6 per cent. 5-10-year electric-light and water bonds are reported awarded to A. W. Lucas of Paducah at par.

Tex., Austin.—The Attorney-General has approved securities as follows: \$50,000 of 5 per cent. 20-year street-improvement bonds; \$180,000 of 5 per cent. 40-year Houston Heights paving bonds; \$12,000 of 5 per cent. 10-20 Zavala county school district No. 4 bonds; \$1500 5 per cent. 10-20 Bastrop county school district No. 26; \$12,000 Harris county school districts 10 and 46; \$900 5 per cent. 5-20 Nacogdoches county school district 35; \$9000 of Frankston school bonds.

Tex., Cleburne.—Petitions are reported being circulated asking that an election be held in Justice Precinct No. 1 to vote on \$300,000 of road bonds.

Tex., Cleburne.—Reported voted: \$178,000 of water-works bonds.

Tex., Corpus Christi.—Reported that a deal has been closed with a Toledo (O.) firm for the \$55,000 of city hall bonds.

Tex., Corpus Christi.—Press dispatches state that a Toledo (O.) firm has agreed to take \$55,000 of city hall bonds.

Tex., Dallas.—\$20,000 of Dallas improvement and school bonds are reported purchased by the Supreme Lodge, Knights and Ladies of Honor, Indianapolis, Ind. The order, it is said, now holds about \$100,000 of Dallas bonds.

Tex., Dallas.—Contract for lithographing the \$100,000 of city hospital bonds is awarded, and after being approved by the attorneys they will be offered for sale.

Tex., Decatur.—\$18,000 of water-works and electric-light bonds recently voted will soon be offered for sale.

Tex., Denton.—Official: Bids will be received until noon January 8 for \$75,000 of 5 per cent. 10-40-year bonds of Road District No. 1, Denton county. S. H. Hoskins is County Judge.

Tex., Grand Falls.—Reported that the Grand Falls Mutual Irrigation Corporation, recently chartered with \$50,000 capital, has arranged with Adams, Candee & Co. of Chicago to place the bonds for reservoirs and canals on the market January 15.



Tex., Houston.—\$1,250,000 of 4½ per cent. 40-year Harris county ship channel improvement bonds have been approved by the Attorney-General. Houston banks will handle the issue.

Tex., Houston Heights.—R. L. Cole, City Attorney, is reported saying that \$180,000 of 5 per cent. 40-year permanent improvement bonds have been sold to Kansas City investors. They were approved and registered.

Tex., Palestine.—Anderson county is reported to have sold the \$150,000 of good-roads bonds to S. A. Kean & Co. of Chicago at par.

Tex., Shiner.—Reported voted: \$15,000 of school-building bonds.

Va., Cape Charles.—The \$20,000 of 5 per cent. school building bonds, denomination \$200, dated March 15, 1911, are reported sold at par to the Bank of Crisfield, Crisfield, Md., and the Farmers and Merchants' Bank of Cape Charles, Va.

Va., Lynchburg.—Official: Bids will be received until noon January 25 for \$550,000 of 4½ per cent. 34-year public improvement bonds; denomination \$1000; dated January 1, 1912. R. C. Quinn is chairman finance committee of Board of Aldermen, and Richard Hancock chairman finance committee of Common Council.

Va., Pulaski.—Concerning the report that Well, Roth & Co. of Cincinnati had purchased \$70,000 of Pulaski county bonds, it is officially stated that there are no bonds for sale and no issue is contemplated.

W. Va., Cairo.—Seasongood & Mayer of Cincinnati are reported to have bought the \$30,000 of 6 per cent. 10-year school bonds at a premium of \$1578, or on a basis of 5.315 per cent.

W. Va., Cairo.—Seasongood & Mayer of Cincinnati, O., are reported to have purchased at 105.26 the \$30,000 of 10-34-year (optional) high-school building bonds.

At Lynchburg, Va., bids will be received until noon January 25 for \$550,000 of 4½ per cent. 34-year public improvement bonds. Further particulars will be found in the advertising columns.

At Dover, N. C., bids will be received until noon February 15 for \$45,000 of 6 per cent. Mosely Creek Drainage District bonds. Further particulars will be found in the advertising columns.

R. H. & G. A. McWilliams, 1600 Steger Bldg., Chicago, Ill., are offering \$125,000 of Arkansas drainage bonds. Further particulars will be found in the advertising columns.

#### FINANCIAL NOTES.

Norfolk, Va., is reported to have retired \$91,000 of 5 per cent. 20-year bonds.

The City National Bank of Bryan, Tex., is reported to have increased its capital from \$50,000 to \$150,000.

The Merchants' Bank of Hurstboro, Ala., proposes, it is stated, to increase its capital from \$10,000 to \$15,000.

The American National Bank of Richmond, Va., will, it is reported, soon increase its capital from \$800,000 to \$1,000,000.

The Universal Mortgage Bond Co. of Birmingham, Ala., has, it is reported, increased its capital from \$200 to \$250,000.

The Virginia Bankers' Association has decided to hold its next annual meeting at Old Point Comfort, June 20, 21 and 22.

The First National Bank of Coeburn, Va.,

is reported to have increased its capital to \$50,000, with \$5000 surplus.

The Richland Savings Bank & Trust Co. of Columbia, S. C., will increase its capital stock from \$25,000 to \$100,000.

The First Guaranty State Bank of Pittsburgh, Tex., has, it is reported, decided to increase its capital from \$35,000 to \$50,000.

Individual deposits in the State banks of Oklahoma now amount to \$41,104,162, an increase, it is said, of over \$4,000,000 within three months.

The First National Bank of Commerce of Munday, Tex., according to press dispatches, has purchased the Citizens' National Bank of Munday.

The Guthrie National, the National Bank of Commerce and the Bank of Indian Territory, all of Guthrie, Okla., have been, according to press dispatches, merged under the name of the Guthrie National Bank.

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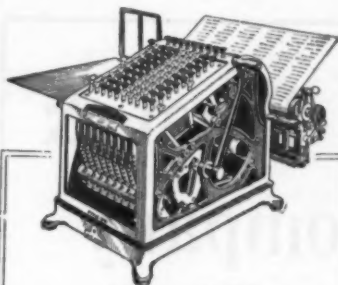
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• If so, why not give us the discounts you offer to your customers for cash? You can place your credit sales upon an 80% cash basis AT THE EXPENSE OF YOUR CUSTOMERS through their not taking your discounts.

We will pay you 80% CASH AT TIME OF SHIPMENT and carry their open accounts until paid, paying you the 20% reserve, as each account is collected by you. You sell your invoices, therefore, borrow no money and have no obligation to meet as your customers pay us off.

You mail your INVOICES DIRECT TO YOUR CUSTOMERS WITHOUT ANY NOTICE THEREON of the sale of their accounts to us. You act as our AGENT to collect all accounts sold us, endorsing your customer's original remittances to us, and by us to our Banks as "V. G. Dunnington, Treasurer," thereby our name does not appear thereon. We can send you Bank Drafts instead of our checks, and all publicity is avoided.

Our total charges are only 1% on the face of invoices paid within 15 days from date of our purchase, 2% within 30 days, and then 1% a month until paid. We charge NO INTEREST OR EXCHANGE on checks and carry accounts until they are SIXTY OR NINETY DAYS PAST DUE.

We are now using about ONE MILLION DOLLARS CASH in the purchase of some FIVE MILLION DOLLARS of open accounts a year from large and well-rated firms, whose names we keep in the strictest confidence.

Why not give our plan a trial NOW with \$5000 to \$25,000 of your present open accounts?

#### Manufacturers' Finance Company

709-710 Keyser Bldg., Baltimore, Md.

# Mercantile Trust & Deposit Company

OF BALTIMORE

## Statement of Financial Condition

At the Close of Business

December 30th, 1911

### RESOURCES

Baltimore City Stocks.....	\$2,508,227.08
Other Stocks and Bonds.....	4,190,599.82
Loans on Approved Collateral—	
Time .....	\$1,527,454.62
Call .....	4,176,036.26
	5,703,490.88
Office Building and Lot.....	390,000.00
Unsettled Open Bond Accounts, etc. (Secured)...	713,073.86
CASH in Hand and in Banks.....	1,469,960.93
	<u>\$14,975,352.57</u>

### LIABILITIES

Capital Stock .....	\$1,500,000.00
Surplus .....	2,700,000.00
Undivided Profits .....	430,782.00
Deposits—	
Subject to Check.....	\$5,831,053.37
Time .....	4,296,557.11
In Trust .....	216,960.09
	<u>10,344,570.57</u>
	<u>\$14,975,352.57</u>

Deposits Dec. 31, 1909..	\$8,041,252.59
Deposits Dec. 31, 1910..	8,809,843.00
Deposits Dec. 31, 1911..	10,344,570.57

### OFFICERS

A. H. S. POST, <i>President.</i>	JOHN McHENRY, <i>Treasurer.</i>
WILTON SNOWDEN, <i>Vice-President.</i>	T. H. FITCHETT, <i>Secretary and Assistant Treasurer.</i>
J. R. WALKER, <i>Second Vice-President.</i>	C. I. REYNOLDS, <i>Assistant Secretary.</i>

### EXECUTIVE COMMITTEE

BLANCHARD RANDALL, <i>Chairman.</i>	
WALTER B. BROOKS,	R. BRENT KEYSER,
AUBREY PEARRE,	CHARLES A. WEBB.

JOHN GILL OF R., *Chairman of Board of Directors.*

## ANNUAL REPORT OF THE CONDITION OF THE GERMAN SAVINGS BANK OF BALTIMORE CITY IN THE STATE OF MARYLAND

At the close of business, Dec. 30, 1911, in conformity with Section 36 of the Banking Law.

Funds on hand December 31st, 1910.....	\$4,335,393.90
Received from deposits during 1911.....	2,084,112.66
Received interest and Dividends on Stocks, Bonds, Loans, etc., during 1911.....	217,867.90
Total.....	\$6,637,374.46
Paid Depositors during 1911, including interest.....	\$2,039,152.65
Paid Expenses during 1911.....	18,029.73
Paid Taxes during 1911.....	11,417.97
Paid Premiums, etc., during 1911.....	20,330.53
Ledger Costs of Bonds reduced during 1911.....	3,677.06
Funds on hand December 31st, 1911.....	<u>4,543,965.60</u>

ASSETS.	
(Book Value.)	
Bonds and Stocks owned.....	\$3,317,135.26
(Stocks and Bonds are held at or under their par value.)	
Loans on Collateral.....	214,475.00
Loans on Mortgage.....	739,838.46
Real Estate (Bank Building).....	25,000.00
Other Real Estate owned and Ground Rents.....	51,054.16
Miscellaneous Assets, Perpetual Insurance Deposit.....	1,500.00
Cash on hand and in Banks and Trust Companies.....	<u>194,072.82</u>
Total.....	\$4,543,965.60

LIABILITIES.	
Due Depositors, including interest $3\frac{1}{2}\%$ per annum credited January 1, 1912.....	\$4,363,962.83
Guarantee Fund and Undivided Surplus.....	<u>180,032.67</u>
Total.....	\$4,543,965.60

Accounts open December 31st, 1910.....	8,089
Accounts opened during 1911.....	1,100
Accounts closed during 1911.....	1,130
Accounts existing December 31st, 1911.....	<u>8,079</u>

CHARLES SPILMAN, *President.*

WILLIAM SPILMAN, *Treasurer.*

The undersigned, appointed by the BOARD OF DIRECTORS OF THE GERMAN SAVINGS BANK OF BALTIMORE CITY, have audited the above Statement, and find the same to be correct.

CHARLES ZEIS,  
HARRY M. BENZINGER,  
THEO. F. KRUG.

## Central Savings Bank of Baltimore

S. E. Corner Charles and Lexington Streets

BALTIMORE, MARYLAND

ANNUAL REPORT OF THE CONDITION OF THE

## Central Savings Bank of Baltimore

In the State of Maryland, at the close of business December 31, 1911, in conformity with Section 36 of the Banking Law.

Funds on hand December 31, 1910.....	\$9,887,115.92
Received from depositors during 1911.....	3,711,778.48
Received interest and dividends on stocks, bonds, loans, etc., during 1911.....	458,940.63

Total.....\$14,057,835.03

Paid depositors during 1911, including interest.....	\$3,457,968.95
Paid expenses during 1911.....	34,651.46
Paid taxes during 1911.....	26,694.44
Paid premiums, etc., during 1911.....	25,160.73
Funds on hand December 31, 1911.....	<u>10,513,359.45</u>

Total.....\$14,057,835.03

Par Value.	ASSETS.	Ledger Value.	Market Value.
\$500,000 State Bonds.....		\$471,750.00	\$474,075.00
53,000 County Bonds.....		53,000.00	54,012.50
2,076,500 Municipal Bonds.....		2,049,360.00	2,084,800.00
3,102,500 Railroad Bonds.....		3,002,640.00	3,115,590.00
634,000 Street Railway Bonds.....		618,000.00	641,350.00
20,000 Water Company Bonds.....		20,000.00	20,500.00
150,000 Gas Company Bonds.....		147,500.00	154,125.00
250,000 Equipment Bonds.....		247,851.25	249,025.00
44,000 Merchant & Miners' Transportation Co. Bonds.....		42,680.00	42,900.00
15,000 Coal Co. Bonds.....		13,950.00	14,100.00
\$6,845,000		\$6,666,731.25	\$6,850,477.50

Mortgage Loans.....	\$2,394,420.00	\$2,394,420.00
Collateral Loans.....	820,783.95	820,783.95
Real Estate—Bank Building.....	200,000.00	200,000.00
Real Estate—No. 5 E. Lexington St.....	34,212.47	34,212.47
Perpetual Insurance Deposits.....	850.00	850.00
Cash on hand and in banks.....	<u>396,361.78</u>	<u>396,361.78</u>
	\$10,513,359.45	\$10,513,359.45

LIABILITIES.	
Due depositors, including $3\frac{1}{2}\%$ per cent. interest credited December 31, 1911.....	\$9,639,962.28
Guarantee Fund, as per ledger.....	873,897.17
Excess of Assets (at market value) over Liabilities.....	<u>1,057,143.42</u>
	\$10,513,359.45

Accounts open December 31, 1910.....	21,224
Accounts opened during 1911.....	2,331
Accounts closed during 1911.....	1,989
Accounts existing December 31, 1911.....	<u>21,566</u>

ROBERT K. WARING,  
J. WILSON COLE,  
*Treasurer.*

Baltimore, January 1, 1912.

We find upon examination that the investments of the Central Savings Bank of Baltimore have been carefully made in Bonds of the most substantial character; that its loans are well secured and that it is economically and judiciously managed.

J. J. NELLIGAN,  
HOWARD B. STEWART,  
JOHN S. DEALE.



# Profit in Poultry in East Tennessee

A few years ago a gentleman went from the North to Morristown, Tenn., and began buying poultry and dressing and shipping it to the markets of the North and East. In the beginning he carried on the business in a very small way, his place of operation being only about 30x40 feet in area, and known as the "chicken factory." He was successful from the first, and soon had sale for all the poultry he could furnish. He created a steady and reliable market for chickens, turkeys, ducks and geese, and for eggs as well, and the territory from which he was able to draw began to widen, and he found the supply keeping step with the demand. Before long roomier quarters became necessary, and he organized a company, built a much larger building, put in a cold-storage plant, established branch houses in nearby towns and purchased poultry over a wide range of surrounding territory.

As many birds are not in proper condition to kill when purchased, a feeding barn was established, where, during the busiest season, 30,000 head are sometimes housed at one time. These are fed from 12 to 14 days on a ration that has special fattening qualities, evaporated buttermilk being an important part, and then, having become properly fat, are slaughtered for the market. When the demand and supply are both good, 4,000 chickens are killed and dressed daily, and in the days immediately preceding Thanksgiving and Christmas 1800 turkeys are killed and shipped, each day. This plant ships one car to Washington regularly on Tuesday of each week to fill a standing order, and often as many as 14 or 15 others to various points. As the cars carry an average of 25,000 pounds of dressed fowls, it will be noted that the business of this concern runs into money very rapidly, and that its distribution of cash among the farmers and chicken raisers is quite an important factor in the prosperity they have been enjoying. And to this must be added also the returns from a weekly egg shipment of 800 cases, 30 dozen eggs to the case. Morristown milk-fed poultry is in great demand throughout the country, and is a favorite order on Southern railway dining cars.

At Telford, a little town on the Southern Railroad in Washington county, Tennessee, that boasts of 125 population and hasn't got it, are two merchants who have been forced to sort of specialize in poultry and eggs. One of them shipped last year \$50,000 worth; the other \$35,000 worth. A total of \$85,000 worth of anything for a village like that is a big thing in any country.

As the Southern Railway handles poultry by a sort of "pick-up" arrangement, it is hard to get figures that will give an adequate idea of what the business totals in the territory under discussion, but some conception can be gotten from such figures as are at hand.

During the months of October, November and December, 1911, there were shipped from Morristown 270,470 pounds of eggs and 328,129 pounds of dressed poultry. Pretty much everybody knows what eggs and poultry brought during those months, so readers can figure for themselves what the shipments amounted to in dollars.

From January 1, 1911, to December 16, 1911, one shipper in Morristown sent out 711,000 pounds of dressed poultry, valued at \$107,000, and 1,319,200 pounds of eggs, valued at \$129,300—a total of \$236,300 for one firm in half a month less than a year.

A shipper in the Knoxville district from December 16, 1910, to December 16, 1911, shipped 1,210,000 pounds of poultry, valued at \$145,200, and 24,000 cases of eggs, valued at \$145,000—a total poultry product of \$289,200 for that one shipper.

The shipments of live poultry over the Virginia & Southwestern Road, a Southern Railway branch, from the same general territory for the month of October just passed totaled 1,010,000 pounds.

The Knoxville & Bristol Railroad, another branch of the Southern, carries an average of 100 cars of poultry a year.

The figures for the last year are not available at Bristol, Tenn.-Va., but during the preceding year the volume of poultry business handled there reached close to half a million dollars.

Other East Tennessee towns from which large shipments of poultry are made are Johnson City, Greeneville, Maryville, Sweetwater, Athens, Cleveland, Chattanooga and numerous intermediate points.

The figures given here are for carload lots only. The shipments in less than carload lots probably total from these same points 33 1/3 per cent. more. Altogether the figures indicate an enormous business in East Tennessee in the poultry line, and furnish some suggestion of what it will grow to in the near future, for it is now in its infancy.

East Tennessee embraces 34 counties lying between the Unaka or "Great Smoky" Mountains on the east and the Cumberland plateau on the west, with an area of 9200 square miles. The extreme eastern portion is mountainous, showing lofty peaks that rear their crests now and again to a height of 6000 feet, falling abruptly to elevated ridges, these seamed in turn with narrow valleys that mark the place where the streams have cut through the elevations. Toward the west abrupt slopes descend to the foothills of 1000 to 1500 feet in altitude, which overlook the valley of East Tennessee, spreading out toward the west, and with a trend from northeast to southwest. This general valley embraces smaller valleys, with their intervening ridges, the hilly, undulating surface varying with level areas of considerable extent. Yet farther west rises the Cumberland plateau, whose flat or rounded heights stand 2000 feet above sea level. This section is drained by the Tennessee River, the Little Tennessee, the French Broad, the Hiwassee, the Watauga, the Holston, the Clinch, the Powell, the Nolachucky and their tributaries, and by the myriad smaller streams descending from the springs in the mountains.

The climate in East Tennessee is equable, being neither very cold in winter nor very hot in summer; the air is pure and invigorating, and the situation is ideal for health and freedom from disease. These things combine to make the best possible conditions for poultry raising, and account in large measure for the success that has been attained in that business with the little effort that has been heretofore given it, the immense poultry product indicated by the figures quoted above being due to natural conditions of elevation, soil and climate rather than to careful and intelligent management.

The soil is admirably adapted to the production of poultry food, and no difficulty is experienced in raising everything necessary for the birds to eat—the grains, the grasses, all the various kinds of food required by scientific methods of poultry culture. Even during the winter months poultry can get the kind of feed that in more northerly latitudes comes only with the spring. This accounts for the large production of winter eggs in East Tennessee. Under intelligent management hens can be kept laying all the year round, except during the moulting season, and there is no necessity for the poultryman's purchasing a pound of any kind of feed from the outside.

Another favorable feature is the cheapness of the housing required for poultry in East Tennessee, which greatly reduces the initial expense of the poultryman. It is not necessary that the birds be kept in expensive buildings such as are required in the North and West. In fact, it is only necessary to have walls at the back and a roof overhead, so as to prevent drafts, though it is well to have a building that can be closed during the coldest weather. There are but few days in the severest winters when the birds cannot range in the open. In summer the woodlands afford an abundance of shade, which keeps the birds from suffering in the warmest days.

Poultry raising in East Tennessee is no longer regarded as simply an adjunct to general farming, but is coming to be recognized as an important independent business proposition, and many men are engaging in it because of the big profits they see in it. In a number of places business men are acquiring grounds in the suburbs of their towns, engaging expert poultry raisers and preparing to go into the business on an extensive scale. Some of these will make a specialty of furnishing guaranteed eggs to regular customers among the big hotels and the wealthier families—those who will be willing to pay an advanced price for eggs that are known to be not more than 24 or 36 hours old.

There are numerous instances of individual poulterers who have been highly successful in the business. One of these started a few years ago at Cleveland, in Bradley county, on a rented place, with five dollars as his working capital. He has paid strict attention to the one industry, and has not only supported his family from the returns, but now owns an excellent farm, highly improved, and worth \$5000. This farm he will devote to poultry and trucking, his poultry activities being principally along the line of raising high-class birds and securing eggs of the best breeds for hatching stock breeders. He kept but 400 chickens last year, yet his profits from October 29, 1910, to November 11, 1911, aggregated \$3000.

A gentleman who established a clothing store at Rogersville, Hawkins county, some 20 years ago and has conducted it since with fair success, about four years ago took a fancy breed of chickens as a side line. He chose a popular breed, and has had ready sale for eggs for hatching at a good price. About two years ago he purchased 58 birds by telegraph from a noted New York breeder, who had just taken a number of blue ribbons at the Madison Square Garden Show. He paid a big price for them, but he has no trouble to sell the eggs at \$15 a setting to other poultry raisers, and recently sold a pen of one male and three female birds for \$600. This gentleman is now anxious to sell out his clothing business and pay his entire attention to raising chickens. He says if he had gone into chickens instead of clothing 20 years ago he would now have enough money to enable him to retire.

Instances of the same general nature could be multiplied to an extent far beyond the limits of the space that can be devoted to this article. In addition to those who have turned their exclusive attention to raising poultry, there are hundreds of farmers who carry it as a "side line," and find more profit in it than can be made in any other branch of their farm work. There is hardly a farmhouse in sight of the Southern Railroad from Bristol to Chattanooga around which the observer from the car window cannot see scores of chickens feeding. And every one of them means money in the pocket of the farmer.

So important has the industry become that the next Legislature that assembles in Tennessee will be asked to make an appropriation for doing practical demonstration work in poultry raising, and to create a commission whose duty it shall be to collect facts about the poultry industry and to furnish these and other information on poultry breeding, feeding and management to the farmers of the State.

T. B. Thackston, agent of the land and industrial department of the Southern Railway, is urging each county superintendent of education to organize a public school poultry club in each of the rural schools, so that the farmers' boys and girls may be given practical lessons in this important industry, such as the selection of birds for breeding purposes, how to mate for best results, the preparation of the birds for exhibition, how to judge and score, how to make up the best rations for hens that are laying, how to fatten the fowls, how to dress them for market and how to get the best results from the marketing. Such lessons would not only be of much practical value, but they would also serve an excellent purpose in connecting the schools directly with the farm home and farm life, and give strong stimulus to the back-to-the-farm movement, which is considered so necessary to the best future development of the Great Republic.

Another matter now under discussion will, if carried out as proposed, give the poultry business a big impetus. It is the organization of an association of producers of eggs for market in each locality and the combination of the entire output for shipment. The eggs will be classified as to color and size, and will be stamped with the name of the owner and the date when laid. These eggs will be sold under the guarantee of the association as to freshness, and every possible safeguard will be thrown around the shipments to protect consumer and establish a character of reliability for the producer that will redound to his profit. It is believed that such an association, properly managed, will bring better prices for better eggs, and result in building up a reliable permanent trade for its members.

The Southern Railway has shown a great deal of interest in the development of the poultry industry in East Tennessee, and has endeavored to promote it by furnishing the dealers and shippers every facility possible for quick transportation of their products to the great markets of the country, and also by co-operating with the individual farmer and breeder and encouraging him to procure the best fowls for both meat and egg production. During the months of October and November, 1911, the Southern sent a special agricultural train over its various lines, having on board an expert breeder and lecturer on poultry, who talked to the farmers in every community visited in a most interesting and instructive manner. In addition to this, the train carried a specially-selected exhibit of several of the best and most popular poultry breeds.

In consequence of these various things poultry breeding in East Tennessee is now progressing more rapidly than ever before, the grade and quality of the product are keeping pace with its development in extent, and the farmers are reaping a greater profit than ever before. By organization, and by the adoption of still further improved methods of handling their stock, these profits will be greatly increased, until the poultry yard will become the real money producer of this entire section.

Lands suitable for poultry farms can be secured in East Tennessee at prices that are very low as compared with what must be paid for those of less merit in the North and West, and there is in no section a more attractive opportunity for profitable returns upon small capital backed by industrious and intelligent effort.



# Classified Opportunities

## MEN WANTED

**WANTED**—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

**PROPRIETOR** of a successful high-class retail business in fastest growing city in the South wants an energetic young man with a few thousand dollars to invest to take management of business, wishing to give his own time to manufacturing interest; references required; highest banking references given. Address No. 930, care Manufacturers Record.

**MANAGER FOR SMALL OIL MILL** **WANTED**.—Mill located in South America. A man capable of keeping up the machinery, extracting oil, making soap, toilet soap, leather dressings, etc. For full information address No. 922, care Manufacturers Record.

**INTERESTED IN FLORIDA?** Wanted—A man of good standing to handle a profitable proposition; big returns; experience not necessary; you can devote all or part of your time. Give reference. The Sebring Real Estate Co., Sebring, Ohio.

**WANTED**—Traveling salesman to carry an up-to-date line of trunks and bags on commission; no advance. Appomattox Trunk & Bag Co., Inc., Petersburg, Va.

**WE WANT** to employ someone to grade and build roads in our township that has the tools and stock to do the work. We have about fifty miles of road to build. We want to commence work March 1. A. E. Smith, Chairman Highway Commission, Mt. Airy Township, Mt. Airy, N. C.

**WANTED**—An experienced railroad man capable of filling position of general superintendent of 200 miles of new railroad, taking active charge of operation, also having the necessary executive ability to fill the position of general manager, which would be open later provided the proof of his capacity and ability to fill such position was given; splendid opportunity for right man. Address quickly, giving experience and references, P. O. Box No. 625, Mobile, Ala.

**WANTED**—A first-class general track man with experience in maintaining dirt track and surfacing new track; one capable of taking active charge and supervision of 150 miles of new track, to have charge of necessary force to maintain and surface and get track in first-class shape. This is not an office position, but an active position, and requires a man of experience and ability, who can obtain permanent employment by addressing P. O. Box No. 675, Mobile, Ala.

## AGENCIES WANTED

**AGENCIES WANTED FOR EXPORT**.—Manufacturers' agents in New York doing business with leading exporters desire one or two good agencies from manufacturers who wish to increase their foreign business. Address No. 914, care Manufacturers Record.

## SITUATIONS WANTED

**MANAGER**—Office, executive ability, experienced and competent all details; efficient manager of subordinates; age 35; excellent reference; at present with Chicago manufacturing company, but desire connections where future is limited only by ability; South preferred. R. M. McCloud, Riverside, Ill.

**SITUATION WANTED** by Cornell graduate having nine years' experience in manufacturing and jobbing business; want position with established company where there is chance of advancement if ability is shown; am willing to start at moderate salary. Address No. 924, care Manufacturers Record.

**WANTED**—Office, financial or managerial permanent connection with a good live concern, where the most stringent system of things necessary to success and to produce results in sales or production, including office, daily balances, audits and comparisons is needed; have a thorough knowledge of usages in business, banking, insurance, railroading and commercial law and the latest office systems. I can save my salary in economies. Address No. 931, care Manufacturers Record.

**MIDDLE-AGED C. E.**, Member Am. Soc. C. E., university education, large experience in organization and management of public works, wide general knowledge of manufacturing and transportation, competent to supervise all kinds of civic improvements and encourage the location of industries, good habits, appearance and address and a "good mixer," desires to locate permanently in some progressive, ambitious Southern city, and would like employment with board of trade or similar body organized to promote the interests of the community. Would correspond with persons looking for such a man. Address P. O. Box 1298, Atlanta, Ga.

**TRAFFIC AND SALES MANAGER** of proven ability, capable of organizing and training a sales force; writing result-producing letters; preparing advertising and introducing office system; thorough knowledge of freight classification, billing and shipping; an office executive with a very broad business, railroad and financial experience; an exceptional opportunity for a large concern desiring an enterprising and energetic business getter and builder. Address "Permanent," 700 Tribune Bldg., N. Y. City.

**Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.**

**OFFICE OR CREDIT MANAGER** in Southern or Southwestern city, by experienced, high-grade man; fully qualified and reliable; best references for ability to render satisfactory service. Address No. 918, care Manufacturers Record.

## EDUCATIONAL

**RENSSELAER POLYTECHNIC INSTITUTE**, Troy, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

## BANKS

**THE PALMETTO NATIONAL BANK**, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

## BUSINESS OPPORTUNITIES

**ACTIVE business man** of experience would invest capital, with services, in established business. Address No. 932, care Manufacturers Record.

**I WISH TO BUY** an ice or electric-light plant in growing Southern town. Write full description, with terms, in confidence to No. 933, care Manufacturers Record.

**FOR SALE**—Old-established mercantile business in Eastern North Carolina; gross receipts, \$40,000 per year; owner's age reason for selling. Write Leighton Realty Co., Aulander, N. C.

**COMPANY FORMING** to market 23,000 acres, well adapted to citrus fruits and truck growing; good transportation; many beautiful lakes; want five associates to assist in floating. Box 867, Sanford, Florida.

**COAL MINE OPPORTUNITY**.—Partner wanted who can help equip 500 acres 4½-foot domestic coal; no partings; only 1400 feet from railroad; can be sold for three or four times its cost; \$3500 to \$5000 required, money or merchandise; a money-maker. Lock Box No. 35, Somerset, Ky.

**TO CORPORATIONS OPERATING IN TEXAS UNDER PERMIT**.—You need an agent at Austin. I will attend to all your business with departments of the Texas State Government during this year for ten dollars. Address W. R. Davis, Resident Agent, Box 317, Austin, Texas. Reference, Austin National Bank.

**MACHINERY MANUFACTURERS**.—We have perfected a self-oiling pulley and friction clutch countershaft that is far superior to anything on the market; would like to make arrangement with some large manufacturer or capitalist to finance the manufacturing of these goods on a commercial basis; demand for product already established; highest endorsements; everything open to rigid investigation. Edward Wilbur, 125 Summer St., Boston, Mass.

**FACTORIES LOCATED**, factory buildings in the principal cities to rent, factories, sawmills, flour mills, warehouses, real and personal property sold or exchanged. Timber, grazing and farm lands sold or exchanged. Properties cared for, rents collected. Office space, desk rooms and Chicago addresses arranged for. High-class manufacturing stocks and bonds for sale and exchange. Offer what you wish to sell, inquire for what you wish to buy. Negotiations confidential. Business promptly executed. Correspondence invited. Kreis & Company, 167 W. Washington street, Chicago, Ill.

**WE PROMOTE SUBDIVISION SALES**.—If you own property in or close to a thriving city, cut it up in town lots and let us sell them by our red tag plan. They sell like hot cakes. Tom Magruder, Mgr., Moberly, Mo.

**TO A PRACTICAL HANDLE MAN**, who is well recommended, we will sell on such easy terms that he can pay for it from the earnings of the plant, an up-to-date plant for making hickory tool handles, singletrees, neckyokes, broom handles; well equipped with an abundant supply of available timber. Address No. 899, care Manufacturers Record.

**WATER-POWER AND FLOURING MILLS** **FOR SALE**.—On Monday, January 25, I will sell at public auction the Warrenton Roller Mills and water-power near Warrenton, N. C. Roller mills capacity, 30 barrels flour, 400 sacks meal daily. Never-failing water power. Opportunity to develop sufficient power to light with electricity several small towns in radius of five miles. Great opportunity for investment. Sold by order of court for division among heirs. Terms, one-half cash. For further information apply to Andrew J. Harris, Commr., Henderson, N. C.

**WE PROMOTE TOWN LOT SALES**.—Land owners adjoining thriving cities, cut your acreage up into town lots, employ us to conduct a red-tag sale. We'll take the lots to the mint and coin them into money for you. Owners, write for particulars. F. J. Raymond Realty Co., Evansville, Ind.

**IN A SOUTHERN TOWN** of over 4000 population, where there is now being developed a hydro-electric power of 20,000 H. P., is a favorable opportunity for a foundry enterprise or a manufacturing plant that can be secured or organized on an attractive basis. Twelve acres of land, with sidetracks, buildings 75x100, and an investment of nearly \$20,000 can be had to the right parties with money and talent to manage, either in partnership with present owners or a sale outright.

This plant is new and erected primarily as a foundry and stove manufactory, but was closed on account of lack of working capital and talent.

The town is on three lines of railways and amidst the greatest opportunities of Southern development. The immediate erection of the great water-power plant makes this city a most favorable location for new industries of various kinds. Address No. 920, care Manufacturers Record.

## TOURIST HOTEL WANTED

**TOURIST HOTEL WANTED AT SAVANNAH, GEORGIA**. We have the ideal location: 10 acres on electric car line, near yacht club; has beautiful trees, artesian water and salt-water riparian rights. Bernard & Waters, Box 92, Savannah, Ga.

## MAILING LISTS

**MAILING LISTS**.—We can furnish 50,000 names, addresses, with amounts of taxable property, of residents of lower South Carolina, all verified by proper county officials. P. O. Box 85, Hampton, S. C.

## MAPS AND BLUE PRINTS

**MAPS OF TEXAS COUNTIES**.—We make blueprint maps of nearly all Texas counties and several Louisiana parishes. Write for prices on those desired. Singleton Bryan & Co., Beaumont, Texas.

## TYPEWRITERS

**IF YOU** are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 609 E. Baltimore street, Baltimore, Md.

## WINTER HOME FOR SALE

**FOR SALE**—Indian River frontage; attractive winter home, modern; furnished if desired; sun parlor; superb views; best citrus soil; 400 fine citrus trees; 65 feet of elevation; highest on coast; rock road; cement walks; phone; good deep well; 11 acres; Northern neighbors; city limits. Come see. Box 31, Cocoa, Fla. (Owner).

**FLORIDA WINTER HOME**.—Ready-furnished six-room cottage; five-acre lot; banks on St. Johns River at Bluffton; best fishing and hunting; a bargain. Address William Hurt, Marion, Va.

## ICE MACHINES

**WANTED**—To correspond with parties desiring or contemplating installing absorption ice machines manufactured by Columbus Iron Works. Consolidated Ice & Power Co., Valdosta, Ga.

## INDUSTRIES WANTED

### MISCELLANEOUS

**ARE you looking for a good factory site?** We have a growing town with good railroad facilities and offer splendid inducements. Address W. D. Welsh, Mayor, Kentwood, La.

**SUFFOLK**.—The best manufacturing and distributing point in Virginia; six railroads and water transportation; plenty of labor; cheap fuel; electric power; seventy manufacturing plants in successful operation; opportunity for furniture and woodworking plants and any wholesale jobbing or manufacturing business; center of tidewater; richest farming section to be found; healthy; excellent schools and churches; filtered water, gas and sewer. Write Board of Trade, Suffolk, Va.

**VICTORIA, TEXAS**, head of navigation of Guadalupe River; center of cotton, corn, truck and citrus fruit-growing district of South Texas; country rapidly developing; opportunities for many industries. If interested in the coastal section of Texas, write for booklet "D" to the Secretary of the Progressive League.

**CLEVELAND, TENN.**, **WANTS YOU**.—The best town in the Southeast, with a hydro-electric development of 32,000 initial horsepower for manufacturing purposes, final development 82,000 horse-power. Free manufacturing sites; exemption from city and county taxes; ample railroad facilities; spring water pumped to all parts of the city; cheap raw materials; 186 miles of pile roads in county; fine farming and trucking section; best of public utilities; cheap white labor; cheap power; ideal location for cotton mill, furniture factory and brick-manufacturing plant; good climate; most rapidly developing city in the Southeast. Write Commercial Club, Cleveland, Tennessee.

**WANTED**.—Asheville, N. C., 31,000 population, including suburbs; 38 miles paved streets; best water on earth; men with capital to invest in money-making enterprises; good opening for manufacturing enterprises. Write Board of Trade.

## INDUSTRIAL PLANTS FOR SALE

### COTTON MILL

**FOR SALE**—Cotton mill in upper South Carolina with about 5000 ring spindles and accompanying equipment for the production of cotton yarns. For full particulars address No. 921, care Manufacturers Record.

### FACTORY

**FACTORY FOR SALE OR RENT**.—50x130 feet, two stories, with additions; located on two good railroads in fine town having natural gas and water system. Address F. D. Freeborn, Knoxville, Pennsylvania.

### FACTORY BUILDING

**FACTORY BUILDING FOR SALE**.—Two-story brick concrete building; best drykila in Oklahoma; warehouse, brick paint or dipping room; truckage suitable for woodwork of any kind. Write for particulars. W. J. Finch, El Reno, Okla.

**FOR LEASE OR SALE ON EASY TERMS**.—Two-story brick factory building, 200x60 feet, with elis, giving total floor space 30,000 square feet, with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers. Site 385x390 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroads and steamboat lines. Barton Myers, Norfolk, Va.

### HANDLE AND SINGLETREE PLANT

**FOR SALE**—Handle and singletree plant, well equipped, where there is an abundance of available timber to last for many years. Address No. 900, care Manufacturers Record.

### SAW MILL

**FOR SALE**—SAWMILL AT SACRIFICE PRICE.—Owing to the recent suspension of Bank of Gunnison, I will sell at very low price a newly-built sawmill of twenty-five thousand capacity, situated on railroad; good timber supply. W. I. Brashears, Gunnison, Miss.

## MINERAL AND TIMBER LANDS WATER POWERS AND MISCELLANEOUS PROPERTIES

**WRITE for list** New Orleans residence lots and factory sites; Louisiana mineral, timber, cut-over and farm lands. Orient Co., Ltd., 513 Audubon Bldg., New Orleans, Louisiana.

**FACTORY SITES**, Business Property, Residences and Farms. If interested in the metropolis of the Southwest or its territory, write for free land list and booklet on Houston, Texas (where 17 railroads meet the sea), or make your wants known. Bank references if desired. Central Land Co., 303 Theater Bldg., Houston, Texas.

**RELIABLE**, accurate and definite information regarding the possibilities for investment in high-grade land propositions in Mississippi and Louisiana; fourteen years' successful operation; references exchanged. Walter G. Hodges, Meridian, Miss.

**SALT—SULPHUR—FULLER'S EARTH PROPOSITION**.—We own and control extensive tracts of land in East Texas, on which we have found rock salt, deposit of sulphur and fuller's earth. We desire to correspond with parties interested who would develop these holdings upon a business basis. We would sell or lease. Address Woldert Grocery Co., Tyler, Texas.

**FOR SALE**—Boundary of 256,000 acres in State of Durango, Mexico; good ranch, mineral and timber land; contains 500,000,000 feet yellow pine; railway building within 25 miles of lands; 25-mile tramway to new railway can be built at small cost; 100 miles to Pacific port of entry by rail, for ship-loading for use of Panama Canal route and for all American and European shipping markets. We control and can deliver promptly this valuable boundary for \$2.50 per acre; one-fourth down; one, two and three years for balance. Principals only need reply. Address for particulars, J. C. Lindley, Greensboro, N. C.



# Classified Opportunities

**MANUFACTURING SITES FREE.** on railroad, about 60 miles east of Chicago; electric power free the first year. For Sale—Fruit lands near Houston, Texas. F. A. Ogden, Houston, Texas.

**IRRIGATED LANDS.**—Fine game preserve and club proposition, eight miles from Brunswick, on Altamaha River. This is a historical place, with Indian mounds, artesian wells and shell roads, containing 2350 acres, with 625 in cultivation. There was originally \$300,000 spent in cleaning up and arranging for irrigation. This must be sold at once to settle up an estate, so this can be had for \$50,000; half cash; balance easy. Milwaukee Building and Investment Co., 1409 Candler Bldg., Atlanta, Ga.

**FOR SALE.**—About 6500 acres of coal, several seams from four to eight feet, of which there is about 2727 acres in fee simple; 3000 acres of oil and gas; nearly 3000 acres of valuable timber; gas and oil have been struck almost on the boundary of this property. The Guyan Valley Railroad runs through this tract, and rights of way have been secured by another railroad also through this tract. Located in Logan county, West Virginia. William Gest, 337 Society for Savings Building, Cleveland, Ohio.

**FOR SALE.**—Eighty acres suitable for high-grade residential subdivision purposes, fronting macadamized boulevard; city water; electric lights; within 350 yards trolley line; contemplated extension will pass the property; located outskirts thriving tidewater city; price low; terms reasonable. W. W. Robertson, Box 574, Norfolk, Va.

## HUNTING PRESERVE FOR SALE

**FOR SALE.**—Large hunting preserve, 14,000 acres, Eastern North Carolina, within four miles of coast; considerable timber, and well stocked with deer, bear, smaller game and fish; title perfect; one of the best hunting preserves in the South. Price, \$5 per acre. This is a bargain at this price. Form a hunting club and buy this. McClure-Davenport-Taylor Co., Inc., Richmond, Va.

## COAL LANDS FOR SALE

**FOR SALE.**—Special bargain in coal land. We offer for a limited time 303 acres of the Pittsburgh or river vein of coal located in Marshall county, West Virginia, three miles south of Cameron, on the B. & O. R. R. This is an excellent investment. The same coal practically adjoining this tract has sold as high as \$125 an acre. This tract we are able to offer at the bargain price of \$75 an acre; one-third down; balance in one and two years at 6 per cent. This coal will undoubtedly sell at \$100 an acre within two years, most likely at much more. It is worth more than we are asking, but we seek a quick sale. If you are interested in coal lands, oil and gas lands, royalties, leases, or production or timber lands, orchard lands or orchards, write us. There are many opportunities to make money in West Virginia. We know where the opportunities are. West Virginia Tri-Products Co., Howard L. Swisher, President, Morgantown, W. Va.

**VALUABLE COAL TRACT FOR SALE.**—A 450-acre tract of coal land, located in East Tennessee, containing six workable surface veins of high-grade coal, suitable for steam, domestic and cooking purposes, besides several excellent workable veins under the surface. The property is now within four miles of a railroad, and a charter for a new railroad has recently been taken out, the proposed route being through the center of this property. There is between 12,000,000 and 15,000,000 feet of merchantable hardwoods on the tract that can be cut and marketed at a handsome profit just as soon as this new road is completed. The price on the property is \$45 per acre, all cash, or \$50 per acre on terms. Blueprints and engineer's report will be furnished genuine buyers who can show financial ability to purchase such a property. Correspondence solicited with principals only; no agents. Address Albert F. Lee, 216 Sixth Ave., Nashville, Tenn.

## TIMBER LAND FOR SALE

**FOR SALE.**—2200 acres of timber land in Liberty county, Georgia, located one-half mile from Ludowika, known in the Clerk's office of the said county as the Charles Tutty estate, R. O. Tutty, executor. About 1600 acres of this timber has not been timbered for 55 years; 1000 acres are now virgin turpentine. The Atlantic Coast Line runs through this tract of land. For terms and particulars apply to the Laborers & Mechanics' Realty Co., Inc., sole agents, 2006 11th St. N. W., Washington, D. C.

## TIMBER FOR SALE

**FOR SALE.**—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Hes, Alexandria, La.

## CUT-OVER TIMBER LANDS

**CUT-OVER TIMBER TRACTS.**  
50,000 acres cut-over pine lands, Miss. .... \$5.50  
20,000 acres cut-over pine lands, La. .... 6.00  
75,000 acres cut-over pine lands, Tex. .... 5.00  
18,000 acres cut-over hardwoods, La. .... 4.50  
Marsh Lands for Reclamation.  
60,000 acres in a body, Gulf Coast of La. 3.00  
Timber Lands.  
20,000 acres L. L. Y. pine, Fla., cut 3500 ft. 7.00  
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 21.00  
30,000 acres hardwood, cut 10,000 ft. (60% red gum) ..... 10.00  
Finest red gum proposition South.  
Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

**10,730 ACRES Louisiana hardwood timber lands,** 104,000,000 ft., on Sabine River, \$15 acre. 20,000 acres rich dark bottom cut-over hardwood, S. W. Arkansas, lands on Ry., \$6 acre. 35,000 acres Louisiana cut-over lands, \$5 acre. Robert Sessions, Winthrop, Ark.

**FOR SALE.**—17,500 acres South Arkansas cut-over land; no overflow; will grow all crops, grasses and fruits in abundance; railroad through land; the timber will more than one third pay for it; dark, sandy soil; price \$6.50 per acre; \$1 per acre cash; balance eight annual payments; 6 per cent. interest; no trade. J. Reed Miller, Tipton, Mo.

## FARM AND TIMBER LANDS

**600 ACRES LAND IN FEE SIMPLE.** located in North Alabama, unimproved, but has fine lot of hardwood timber—oak, hickory and poplar. Price \$7.50 per acre. Hickory wood the money. M. F. Webb Real Estate Company, 291 Jefferson County Bank Bldg., Birmingham, Alabama.

**FARM AND TIMBER LANDS.**—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

**400 ACRES OF LAND** in Rapides parish; 60 acres open; fair timber of various kinds of hardwood; two cabins; open land fenced; does not overflow and is very fertile. A bargain at \$12.50 per acre; one-half cash; balance one, two, three and four years at 6 per cent. interest; must sell at once. Address Box 137, Alexandria, La.

**ARKANSAS hardwood timber tracts;** in touch with owners; have some bargains. Yell county colonization proposition, 15,000 acres, at \$5; timber enough to pay out. Fredricks Realty Company, Springdale, Ark.

**I HAVE BARGAINS IN TIMBER TRACTS.** large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.

Wm. R. Taylor, Land and Timber Investments, 508 Perrin Building, New Orleans, La. Established 1893. Sales over \$6,000,000.

## COLONIZATION LANDS

**11,000 ACRES** fine agricultural land, including an entire town of some 50 dwellings and many more assets. Price \$6.50. Vestal & Haygood, Arkadelphia, Ark.

## PLANTATIONS FOR SALE

**FOR SALE.**—Southern plantation, 700 acres, 600 cleared and under cultivation, 100 timbered; large old colonial mansion in large oak grove; two miles water front; steamer wharf on property; well fenced with wire fencing; five tenant-houses; servants' house; all necessary outbuildings; cotton gin; stock sheds; pasturage for 200 head of stock. Price \$17,500; terms, one-third cash; balance long time if desired. McClure-Davenport-Taylor Co., Inc., Richmond, Va.

**3555 ACRES** of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central Railroad; nearest shipping point, four miles from the dwelling. The land corners within half mile of one of the shipping points. A sufficiency of cabins for tenants, stables, cribs, cotton pens and all outbuildings. Forty-five head of mules and horses, cows, farming implements and feedstuff. Prices very low. Terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner of the property.

## FARMING LANDS

**WE OWN** and offer for sale on easy terms more than 100,000 acres of farming lands in Louisiana and Mississippi. Anyone interested in Southern investments should write us direct and save the middleman's profit. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

**FOR SALE.**—50,000-acre tract of cut-over land; excellent proposition for colonization purposes; two good railroads through the land; good water, productive soil and good drainage; \$6 per acre.

Several good tracts of cut-over land, ranging from 1000 to 10,000 acres, with good water, productive soil, good railroad facilities; \$5 to \$7 per acre. Good improved farms from 20 acres up, prices ranging from \$10 to \$25; good railroad facilities; good schools. Some good bargains for quick action. Address Angelina County Progressive Industrial League, Lufkin, Texas.

## FARM AND RANCH LANDS

90,000 acres Durango,	price \$1.75 per acre
80,000 acres Coahuila,	price 2.25 per acre
80,255 acres Chihuahua,	price 3.00 per acre
100,000 acres Sonora,	price 3.00 per acre
375,390 acres Durango,	price 3.00 per acre
162,783 acres Chihuahua,	price 2.00 per acre
135,147 acres Durango,	price 3.00 per acre
230,000 acres Coahuila,	price 1.50 per acre
3,500,000 acres Chihuahua,	price 2.50 per acre
405,000 acres Chihuahua,	price 2.00 per acre
200,630 acres Tamaulipas,	price 3.50 per acre
70,000 acres Chihuahua,	price 1.50 per acre
28,000 acres Chihuahua,	price 3.50 per acre
107,355 acres Tamaulipas,	price 2.25 per acre
179,648 acres Tamaulipas,	price 2.25 per acre
89,250 acres Coahuila,	price 2.75 per acre
1,115,840 acres Tamaulipas,	price .75 per acre
1,393,365 acres Sonora,	price .75 per acre
191,000 acres Sonora,	price .75 per acre
60,000 acres Durango,	price 4.50 per acre
200,000 acres Durango,	price 2.00 per acre
100,000 acres Sinaloa,	price 5.50 per acre

Cass & Fry, 20 City National Bank Building, El Paso, Texas.

## PECAN ORCHARDS

**FOR SALE.**—Big bargain; two improved farms on large lake; 10 acres, set in paper-shell pecan trees; well adapted to trucking and general crops. For particulars write owners, T. S. McManus, Waldo, Fla.

**VALDOSTA, GEORGIA, PECAN PLANTATIONS.**—Pecan culture offers largest returns; five-acre tract on easy payments assures a steady growing income; we take care of orchards for four years; 800 acres under cultivation in budded paper-shell pecans. Write for booklet. South Georgia Real Estate & Development Co., Valdosta, Ga.

**FIVE-ACRE PECAN ORCHARDS IN ALABAMA.**—I am offering fifty tracts of this size to the first fifty buyers. Now is your opportunity to get a start in this profitable business on easy terms. Monthly payments if desired. I can furnish best of references, and if preferred, will manage tracts for non-resident owners. Write for full particulars and terms. Oscar V. Case, Fort Payne, Ala.

## APPLE ORCHARDS

**400-ACRE APPLE FARM;** 20,000 bearing trees; yearly profit \$15,000; located in Arkansas apple belt; \$80 per acre for short time. Vestal & Haygood, Arkadelphia, Ark.

## CABBAGE PLANTS

**AN ACRE OF CABBAGES** near a town or village will net over two hundred dollars. We have twenty-five acres in cabbage plants of all improved varieties, grown in the open air, and are positively frostproof. Will make large heads. Price, 1000 to 5000, \$1.25 per thousand. Special prices over 5000. Packed in neat boxes and tied in bunches if desired. Special express rates. The Sea Island Plant & Seed Co., Meggetts, S. C.

## FARM, FRUIT AND TRUCK LANDS

### ALABAMA

**FOR A HOME OR FOR INVESTMENT** let us write you interestingly of more than 100,000 acres of desirable land which we have for sale at wonderfully low prices in Alabama. Any location, large or small farm, pasture and fruit lands. Picking out bargains throughout the State is our daily business. Alabama State Agricultural Land Co., Center, Ala.

### ARKANSAS

**10,000 ACRES** unimproved land; good general farming, all level, well located to railroads, schools and churches; good soil. Price \$6 per acre. J. D. Reynolds, Camden, Ark.

**FOR SALE.**—The best land for the least money in the State of Arkansas can be had in Perry county; any size tracts; improved or unimproved; prices \$5 to \$12.50 per acre. For particulars write J. W. Cook Land Co., Perry, Ark.

### FLORIDA

**FLORIDA** winter home and celery farm, 10 acres, sub-irrigated, facing St. Johns River; finest fishing and shooting; beautiful bungalow, surrounded by orange trees. Address Cecil Gabbett, Sanford, Florida.

**FOR SALE.**—920 acres of good muck land, clay subsoil, good truck land or for hog or stock farm; 17 miles from Jacksonville; only \$10.50 acre. By owner, A. E. Reid, 296 Biscay Building, Jacksonville, Fla.

**WHY PALMETTO LEADS.**—The 800,000 acres of fruits and early vegetables attests the superiority of soil, climate and irrigation necessary to produce such crops. The ease with which such crops are handled by rail and water make it an ideal place for fruit and vegetable growing. The Manatee River, Terra Cotta and Tampa bays furnish ideal salt-water fishing, boating and bathing. For further information address The Manatee River Board of Trade, Palmetto, Florida.

**FLORIDA FARMS ARE FORTUNES.**—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

**FLORIDA FRUIT AND TRUCK LANDS.**—We offer 10-acre tracts in that part of the State of Florida lying in Hillsborough county and Lake Butler region, in the Pinellas peninsula, on the west coast of Florida, on the Gulf of Mexico; with its elevation and rolling hills is especially suited for fruits of all kinds—grapefruit, oranges, grapes, dates, figs, bananas, peaches and other fruits, as well as vegetables, potatoes, corn, beans, peanuts and all the varieties that can be produced anywhere. The Tarpon Springs district offers the most favorable conditions for farmer, home seeker and investor. Fertile lands in small tracts, easy monthly payments; guaranteed title. Investigation invited. If you want a bargain and a home in the most desirable part of Florida, write now for particulars and reservation. Tampa & Tarpon Springs Land Co., Tampa, Florida.

### LOUISIANA

**HEADQUARTERS FOR NORTH LOUISIANA LANDS.**—Large and small tracts, suitable for plantations, small farms, orchards or truck gardens. Climate, soil and health conditions here are unsurpassed. The staple crops of the North grow in this section alongside of cotton and cane. A great stock country. Write for particulars, stating your requirements. References, my customers and any bank in Shreveport. W. A. Jones, Authority on North Louisiana Lands, Shreveport, La.

**FORTY-ACRE TRUCK FARMS** for sale in the famous strawberry belt of Louisiana; on main line of Illinois Central Railroad. Price \$25 per acre on easy terms. Similar lands only a few miles distant are selling as high as \$75 per acre. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

**LOUISIANA LANDS.**—We make a specialty of improved farm lands, and on application will mail free list giving price and description of more than a hundred tracts, from 18 acres to 2400 acres. Also write us for hardwood, cut-over and colonization propositions from 1000 to 60,000 acres. Grace Realty Co., Plaquemine, La.

### MISSISSIPPI

**FOR SALE AT SACRIFICE PRICES.**—Owing to the recent suspension of Bank of Gunnison, I will sell at very low prices several delta farms of from 40 to 200 acres. W. I. Brashears, Gunnison, Miss.

**FORTY-ACRE FARMS** in George county, Mississippi, 35 miles northwest of Mobile. This is one of the most-favored general farming sections of the entire South, and no better values can be found anywhere. Price \$25 per acre on easy terms. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

### NORTH CAROLINA

**WANTED.**—Men to become independent farmers in Eastern North Carolina, the "Nation's Garden Spot." Leads for large profits on small capital. Write for booklet. C. Van Leuven, 815 Southern Bldg., Wilmington, N. C.

### TEXAS

**FOR SALE.**—235½ acres prairie land, located on Santa Fe Railroad and on public road (shelled) only 15 miles from Beaumont and one-quarter mile from Fannett; suitable for general farming or for subdividing into smaller tracts. Title perfect. Price \$27.50 per acre. Also other lands suitable for subdivision. Texas Realty Co., Beaumont, Texas.

**JAS. GOODE REAL ESTATE CO.,** ranch and irrigated lands. Office, Orient Hotel, Pecos, Tex.

**IRRIGATED TEXAS LANDS** near Corpus Christi; crops certain; profits \$35 to \$40 per acre yearly; easy terms. Write for folder. W. A. Sipe, Robstown, Texas.

**THE BLACK LANDS OF NORTH TEXAS** are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Goodwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Fount Ray, Decatur, Texas.

**240-ACRE FARM** on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$25 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

**TEXAS COAST COUNTRY BARGAIN.**—8000 acres fruit and general farm land surrounding a railroad station at small town, 35 miles from city; 500 acres now in cultivation; only \$12 per acre; terms if desired. C. H. Stanfield Land Co., Houston, Texas.

**ORANGE LAND.**—Texas gulf coast orange, fig and garden farms; \$15 down and \$15 per month; black loam prairie; good roads, schools, churches and markets; between Houston and Galveston. Send for illustrated literature. Agents wanted. L. Bryan & Co., Houston, Texas.

**RICHEST FARM AND FRUIT LANDS IN FAMED BEE COUNTY, 60 MILES FROM GULF, IN THE RAIN BELT.**—Old Wilson ranch, 18,700 acres, in small tracts, 40 to 640 acres, each facing roadway; close to railroad; good automobile roads; finest black sandy loam; clay subsoil; no rock; practically no waste land; gently undulating; perfect drainage; good water; coming truck and citrus fruit section; can raise winter vegetables, then plant cotton or corn; climate balmy and healthy; golf breeze makes summer nights delightful; no malaria nor mosquitoes; extensive development going on. Write for booklet. Low price; easy terms. If wanted, will sell 5000 or 9000 acres in a solid block at especially attractive figure. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

**WELL-IMPROVED FARM FOR SALE.**—500 acres, adjoining and same quality as land described next above; 300 acres in cultivation, all fenced and cross-fenced; excellent farm improvements; best in that section of country; ideal Southern home. For quick sale at low price. Terms, 1 to 5 years. Write for full particulars. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

**10,000 ACRES** Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.



# Classified Opportunities

[CONTINUED FROM PAGES 80 AND 81.]

**THE FRIO VALLEY WINTER GARDENS,** La Salle county, Southwest Texas, a colony of 100,000 acres level rich black sandy loam in famous artesian belt; grow oranges, figs, Bermuda onions. We are opening Fowlerton, a new town on new railroad in heart of the colony. Guaranteed improvements on town-site. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plans, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

**COTTON AND CORN LAND.**—12,500 acres, near two good railroads, being one mile from one and two miles from the other; splendid colonization tract; at \$10 per acre; one-fourth cash; balance 6 per cent. Address owner, Dr. C. S. Preston, 1007 Scanlan Bldg., Houston, Texas.

**IRRIGATED LANDS.**—Parties in the North, East and Middle West interested in improved and unimproved irrigated lands and ranch property in the great Pecos section, communicate with us. Pawkett & Davis, Pecos, Tex.

## MACHINERY AND SUPPLIES

**WANTED.**—Every consumer in the Southwest to know that the Texas Rolling Mill Company of Fort Worth, Texas, manufactures track spikes, track bolts, machine bolts and nuts; also standard sizes of bar iron. One hundred tons always in stock. Prompt shipments our specialty. Satisfaction guaranteed.

## DREDGE MACHINERY

**DREDGE MACHINERY.**—Osgood, second-hand, good condition; ton dipper; value \$5500; will sell for \$4500. Address J. L. Connell, Inverness, Fla.

## KEY MACHINES

**HARRISON KEY FILING JIG,** the greatest invention of the age; enables anyone to make perfect duplicate pin tumbler keys; no mind; saves blanks; price within reach of everyone. Harrison & Co., 81 New St., N. Y.

## FINANCIAL

**8 PER CENT. 5-YEAR OKLAHOMA FARM MORTGAGES.**—Yes, rate is high, but sure and easily paid; conditions warrant it, and you get benefit; lands cheap, rich; values doubling; 25 years' experience in Southwest; 10 years bank cashier here; know people, lands, laws, resources, local conditions; never lost a mortgage nor had a title contested; abundant references; circular; investigate. J. G. James, Roff, Oklahoma.

**8% PREFERRED STOCK,** free of taxes, backed by real estate in a progressive city, for sale in amounts from \$100 to \$15,000. Will bear close investigation. For particulars address Box 148, Charlotte, N. C.

**\$1,000,000 OF 6% BONDS,** secured by first mortgage on productive real estate, minimum value of which is eight to ten times the face of bonds. Proceeds to be used for further improvements. Property situated in one of the most resourceful and rapidly developing districts in the Southwest. Would sell all or a part of issue. Responsible parties only. Address J. L. Farley, care of Manufacturers Record, Baltimore.

**SAVANNAH, GA.**—Real estate loans paying 6 per cent. to 7 per cent. to the investor; absolutely safe. Beautiful sites for winter homes at Vernon View, the salt-water place near Savannah on the Grand Prize Course; ideal winter climate. G. A. Mercer, Law and Real Estate, Savannah, Ga. References: Any bank or trust company in Savannah.

## PATENT ATTORNEYS

**EUGENE C. BROWN, ENGINEER** and Patent Lawyer, Suite 40 Victor Bldg., Washington, D. C., Member Bar U. S. Supreme Court. Patents and Trademarks; Patent Suits for Infringement. Mr. Brown is especially qualified to prosecute cases in Patent Office and patent litigation from both Engineering and Legal standpoints, having been Examiner in U. S. Patent Office for nine years. Send sketch for advice.

**IDEAS WANTED.**—Manufacturers are writing for patents procured through me. Send for free 72-page guide and "Stepping Stones" (containing over 200 inventions wanted). Personal services. Clients' patents sold free. Trade-marks registered. R. B. Owen, Dept. 12, Washington, D. C.

**PATENT YOUR IDEAS.**—\$100,000 offered for one invention, \$3500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F street, Washington, D. C.

**PATENTS Secured or Fee Returned.** Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$15,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

## PATENTS FOR SALE

WE HAVE recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: T. P. Woolf, saw jointer; J. H. Stripe, window sash; Israel H. Mordick, monkey wrench; Frank Gostiner, car brake; W. W. Johnson, water device for engines; R. E. Crowe and G. O. Prowse, ironing-board; Jos. T. Bland, fire alarm; J. W. Cowell, nut lock; Pearl H. Edgar, drinking fountain; Geo. C. Cross, tire protector; Jos. Borges, toy; D. W. Flynn, smoking-pipe attachment; C. E. Burchfield, air coupler; John B. Clay and Wm. J. Hogue, cottonseed separator; Philip Conniff, lubricating sticks or bars; Messrs. Albertson & Iverson, shock loader; John J. Cochran, hose coupling; John R. Flood, vault door; H. L. Bretsch, tellurian; E. A. Jackson, cattle guard; Myron O. Bray, temperature indicator for tempering furnaces; Walter H. Wilkoning, safety catch; Thos. N. Locke, sanding device for tracks; C. S. Langton, spring motor; J. R. Randies, mailbox.

**PATENT** on valuable novelty of universal use, endorsed by men of high standing, for sale outright or on royalty; a money-maker for competent manufacturer. Address Z. H. Blouch, Lebanon, Pa.

## REBUILT ENGINES, BOILERS, PUMPS, Etc.

### FULLY GUARANTEED

14"x36" L. H. Weisen & Vilter Corlis Engine.  
14"x42" R. H. Frazer & Chalmers Engine.  
42"x14" Horizontal Tubular Boiler, 110 lbs.  
66"x16" Horizontal Tubular Boiler, 120 lbs.  
72"x20" Horizontal Tubular Boiler, 100 lbs.  
78"x20" Horizontal Tubular Boiler, 110 lbs.  
90"x16" Internally Fired Marine Boiler, 95 lbs.  
18½-8½-10 Worthington Duplex Pump.  
14-8½-12 Canton-Hughes Duplex Pump.  
No. 3 Style "B" Crusher.  
14-ton Kelly-Springfield Road Roller.  
50 H. P. Fairbanks-Morse Gasoline Engine.  
30 H. P. Struthers-Wells Gasoline Engine.  
7x10 Double Cylinder Single Drum Lidgetwood Hoist, without boiler.  
24x8 Putnam Lathe.  
1000 to 8000-gal. capacity Storage Tanks.  
We handle everything in the line of Machinery and Supplies. Write for our Special Bargain List No. 235.

**CHICAGO HOUSE WRECKING CO.,** 35th and Iron Streets, Chicago, Ill.

## These Advertisements Too Late for Regular Alphabetical Index

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# PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS.

MISCELLANEOUS.

## NEW BOND OFFERINGS

### \$10,000 5% Bonds For Sale CHANGE OF DATE.

Beaufort, N. C.  
The Commissioners of the Town of Beaufort will on the 25th day of January, 1912, at 8 o'clock P. M., at the town hall, open bids for the Coupon Bonds of the said town in the amount of ten thousand dollars (\$10,000) to cancel outstanding indebtedness.

These bonds will be issued in the denominations of not less than \$100 and not more than \$1000; will bear interest at the rate of five per cent. per annum; interest payable semi-annually, and will mature — years from their date.

Bidders are requested to designate the denomination of the bonds. These bonds will not be sold for less than par, and no bid will be considered unless accompanied by a certified check for at least 1 per cent. of the amount bid.

Any further information desired will be furnished upon application to the Town Clerk.

A. T. GARDNER, Mayor.  
THOS. THOMAS, Town Clerk.  
Beaufort, N. C.

### Proposal for Erection of Hamilton County Jail, Chattanooga, Tenn.

Until 2 o'clock P. M. February 15, 1912, sealed proposals will be received by the Hamilton National Bank Building, Chattanooga, Tenn., for the erection of the Hamilton County Jail.

Plans and specifications may be obtained from Barnwell & Jones, architects, Chattanooga, Tenn., after January 15, on deposit of \$25.

A certified check in the sum of \$2500, payable to M. M. Allison, chairman, must accompany each proposal. The successful bidder shall furnish a bond acceptable to the Commission in the sum of one-third of the contract price.

Proposals to be based upon monthly payments to be made upon architects' estimate of completed construction of 80 per cent. of said estimate. The balance of 20 per cent. to be paid upon completion and acceptance of said work.

The right to reject any or all bids is hereby reserved.

M. M. ALLISON,  
Chairman.

## GOVERNMENT PROPOSALS

**PROPOSALS FOR LUMBER, MONKEY Wrenches, Nails, Nuts, Pig Lead, Manila Rope, Gasoline and Sal Soda.** Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. February 7, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 672) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

**PROPOSALS FOR STEEL REINFORCEMENT Bars and Centrifugal Sump Pump,** direct connected to induction motor and mounted on truck, together with Necessary Fittings. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. January 22, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 672) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill., and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

## 8c. A WEEK

### —An Investment

The safest investment any business man—North, East, South or West—can make is a subscription to the *Manufacturers Record*. Reading a single copy may mean a saving of many dollars if you want to buy; if you have something to sell, it may mean a profitable sale. Every issue is laden with chances for both buyers and sellers. Let us send you a sample copy and tell you all about it.

52 weekly copies, \$4.00—8c. a week.



# PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

## GOVERNMENT PROPOSALS

**U. S. ENGINEER OFFICE, Jacksonville, Fla., December 19, 1911.** Sealed proposals for removing wreck of the dredge "Hester" in channel from Clearwater Harbor to Tampa Bay, Fla., will be received at this office until 12 M. January 19, 1912, and then publicly opened. Information on application. J. R. SLATTERY, Capt., Engrs.

**U. S. ENGINEER OFFICE, Mobile, Ala., December 22, 1911.** Sealed proposals for construction of the 80-foot twin-screw motor survey boat Dauphin will be received at this office until 11 A. M. January 22, 1912, and then publicly opened. Information on application. C. A. P. FLAGLER, Major, Engrs.

**MISSISSIPPI RIVER COMMISSION, First and Second Districts, U. S. Engineer Office, Memphis, Tenn., January 8, 1912.** Sealed proposals for furnishing one locomotive crane will be received at this office until 12 o'clock noon, February 8, 1912, and then publicly opened. Information on application. CLARKE S. SMITH, Major, Engrs.

**TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., December 27, 1911.** Sealed proposals will be received in this office until 3 o'clock P. M. on the 7th day of February, 1912, and then opened, for the construction of a one-story and basement brick and stone faced building, covering approximately 5000 square feet ground area, first floor of fireproof construction, tin roof (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures), for the United States Postoffice at Goshen, Ind., in accordance with drawings and specifications, copies of which may be obtained from the custodian of site at Goshen, Ind., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

**TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., January 3, 1912.** Sealed proposals will be received in this office until 3 o'clock P. M. on the 15th day of February, 1912, and then opened, for the construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures) of a one-story and basement non-fireproof building of approximately 4235 square feet ground area, brick faced, with stone trim, for the United States postoffice at Bonham, Tex., in accordance with drawings and specifications, copies of which may be obtained from the custodian of the site at Bonham, Tex., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

## NEW BOND OFFERINGS

## \$25,000 5% Bonds

The Mayor and Council of the city of Claxton, Georgia, will receive sealed bids until 12 o'clock noon January 16, 1912, for the purchase of the following bonds of said city:

\$25,000 water-works and electric-light bonds. Said bonds are of the denomination of \$1000 each and bear interest at the rate of 5 per cent. per annum. The interest is payable annually at such place as may be designated by the purchaser.

Five thousand dollars of said bonds is to become due and payable at the end of ten years, ten thousand dollars at the end of twenty years, and the remaining ten thousand at the end of thirty years.

Bonds will be dated January 1, 1912. All bids must be accompanied by a certified check for 2 per cent. of the amount of the bonds bid for.

This bond issue was validated by the Superior Court of Tattnall County, Georgia, on the 21st day of December, 1911. The Mayor and Council reserve the right to reject any and all bids.

Direct all bids to "Mayor and Council, Claxton, Ga."

W. F. FREEMAN, Mayor;

D. C. SWINDEL,

J. C. MILLER,

R. R. TIPPINS,

R. B. PARKER,

Counsel.

## Bonds For Sale

For Sale—\$240,000 Mecklenburg County Bonds, to run 32 years; coupons; 5 per cent. interest, payable May 1 each year, and not less than five bonds to be paid each year on May 1. These bonds are issued for permanent road improvement in five magisterial districts in the county. Bonds to be delivered March 1, 1912, and paid for in cash at the Treasurer's office in Boydton, Va. The interest for March and April, 1912, to be deducted from the purchase of the bonds. Bids to be opened by the full Board in session at Boydton, Va., January 29, 1912. A certified check of \$1000 must accompany each bid. The Board reserves the right to reject any bid. Address bids to Chairman Board of Supervisors, Boydton, Va.

For information address any one of the Committee.

L. H. HAYES, Union Level, Va.

L. GREGORY, Chase City, Va.

R. T. GORDON, Clarksville, Va.

R. L. THOMASON, Skipwith, Va.

C. S. HUTCHESON,

Clarksville, Va., R. F. D. No. 4

W. H. RYLAND, Dockery, Va.

SAML. A. WARREN, Bracey, Va.

L. J. PEOPLES, Keats, Va.

Committee.

## Notice to Bond Buyers

The City of Manchester, Meriwether county, Ga., will receive sealed bids until the 15th day of February, 1912, at 12 o'clock noon, for the purchase of \$15,000 Electric-Light Bonds, interest, 5 per cent. semi-annually. Bonds mature \$1500 on the first day of each successive January, 1912 to 1941. Gold bonds of the denomination of \$500. Coupon, but may be registered. Dated January the first, 1912, and both principal and interest payable at the Hanover National Bank, New York City. A certified check for \$300 must accompany each bid.

Bidders may submit form of bond to be issued and include copy of same in their bid. The successful bidder will be required to accept bonds at the office of the City Clerk.

Usual rights reserved.

By order of the Mayor and Council.

JAMES S. PETERS,

City Clerk and Treas.

This December 29, 1911.

## \$550,000.00 City of Lynchburg, Virginia, Public Improvement Bonds. Exempt from all City Taxes.

The undersigned will receive sealed proposals until 12 o'clock noon January 25, 1912, for \$550,000.00 thirty-four-year Public Improvement Bonds of the City of Lynchburg, Virginia.

These bonds will be issued in denominations of \$1,000.00 each, dated January 1, 1912, bearing interest at the rate of four and one-half per cent. per annum, payable July and January. Both principal and interest payable at the office of the United States Mortgage & Trust Company, in the City of New York.

The bonds will be engraved under the supervision of and certified as to their genuineness by the United States Mortgage & Trust Co. of New York.

A check for two per cent. of the par value of the bonds bid for must accompany each bid. Said check payable to the order of the Treasurer of the City of Lynchburg, Va., and certified to by a responsible bank and deposited as a guaranty of good faith.

The right is reserved to reject any and all bids.

R. C. QUINN, Chairman,

Finance Committee of Board of Aldermen.

RICHARD HANCOCK, Chairman,

Finance Committee of Common Council.

FINANCIAL STATEMENT.

Assessed Valuation, 1911.....\$32,534,580.00

Actual Valuation.....50,000,000.00

Total Bonded Debt, including this issue.....3,018,400.00

Water Debt, included in total.....\$34,000.00

Sinking Funds.....225,188.00

Sinking Fund for Water Bonds, included in above.....63,750.00

City Property, Schools, Water-Works, Parks, Fire Departments, Public Buildings and Real Estate, etc.....2,342,212.00

Population, 1910.....29,494

## North Carolina Drainage District Bonds, Issued Under the Laws of the State, For Sale.

Sealed bids will be received at the office of the undersigned at Dover, North Carolina, until February 15, 1912, at 12 o'clock M. for the purchase of forty-five thousand dollars (\$45,000) Moseley Creek Drainage District Bonds to be issued in accordance with the laws of the State of North Carolina, Public Acts of 1909, as amended by Public Laws of 1911, bearing interest at 6 per cent. per annum, payable semi-annually; said bonds payable in ten (10) equal installments; the first installment of principal to be due and shall mature at the expiration of three (3) years from date of issue, and one (1) installment for each succeeding year for nine (9) additional years; to be issued in denominations to suit purchaser, and payable at such time and place as may be designated by purchaser upon acceptance of bid.

These bonds are exempt from all county or municipal taxation or assessment, general or special, and the interest thereon shall not be subject to taxation as for income, nor shall said bonds be subject to taxation, nor the coupons thereon, when constituting a part of the surplus of any bank, trust company or other corporation, and are deductible from the assets of such corporation in ascertaining the taxable value of the shares of such corporations.

Bids invited for the whole or any part of said bonds. Certified check of proposer in the sum of \$500 required to accompany bids for the whole of such issue, or proportional part less than for whole.

Bidders may submit form of bond with bid, or the same will be issued in form requested by successful bidder at the time of acceptance of bid.

All further information concerning legality of issue may be had by application to Guilfo & Guilfo, Attorneys, New Bern, North Carolina.

All bids must be submitted to the undersigned at his office at Dover, North Carolina. This December 30, 1911.

PRESIDENT MOSELEY CREEK DRAINAGE DISTRICT.

## For Sale: \$125,000 6% Semi-annual Arkansas Drainage Bonds

Series 1 to 25 years. District organized under late Amended Law. If interested, write R. H. & G. A. McWilliams, 1600 Steger Building, Chicago.

## MISCELLANEOUS

## Courthouse

### NOTICE TO CONTRACTORS.

Sealed proposals will be received by the County Court of Scott County, Missouri, until 10 o'clock A. M. February 8, 1912, for the erection of a Fireproof Courthouse Building, to be erected by the County of Scott, Missouri, on the public square in the Town of Benton, Scott County, Missouri.

Plans and specifications are on file at the office of the undersigned and also at the office of H. H. Hohenschild, Architect, Suite 311 to 312 Navarre Building, St. Louis, Missouri; all applications for plans must be directed.

JAMES MCPHEETERS, Clerk, County Court, Scott County, Missouri.

## Reservoir, Charlotte, N. C.

Sealed proposals will be received by the Board of Water Commissioners of the City of Charlotte, at the office of the Clerk, until 5 P. M. February 1, 1912, for building a Reservoir.

The work will include about 55,000 cubic yards of embankment, 6000 square yards 6-inch concrete slope, 600 cubic yards concrete core wall, clearing, grubbing, stripping, etc.

Plans and specifications will be on file at the offices of the Clerk and the Engineer in Charlotte, N. C. Copies of the specifications, form of proposal, etc., will be furnished on deposit of ten (\$10) dollars, which will be refunded on the return of same.

As an evidence of good faith each bid must be accompanied by a certified check for \$3000. The right is reserved to reject any or all bids.

BOARD OF WATER COMMISSIONERS.

Engineer: A. H. WEARN, Clerk.

GILBERT C. WHITE.

## Construction of Concrete Lock

### NOTICE TO CONTRACTORS.

State Capitol, Tallahassee, Florida.

Sealed proposals will be received by the Trustees of the Internal Improvement Fund of the State of Florida until 10 o'clock A. M. Thursday, February 1, 1912, for building a concrete lock in the Miami Drainage Canal about four miles from Miami. A complete set of drawings and specifications can be obtained from the office of the Chief Engineer, Tallahassee, Florida, on the payment of two dollars (\$2) to cover cost of same.

Each proposal submitted must be accompanied by a certified check, payable to W. V. Knott, State Treasurer, for five hundred dollars (\$500) as a guarantee that the party awarded the work will execute a proper contract and bond within 15 days. Checks of unsuccessful bidders will be returned to them immediately after awarding the contract. The Trustees reserve the right to reject any or all bids. Proposals should be addressed to Albert W. Glickert, Governor and Chairman Trustees Internal Improvement Fund.

J. O. WRIGHT, Chief Drainage Engineer.

Approved by the Trustees of the Internal Improvement Fund, January 2, 1912.

J. C. LUNING, Secretary.

## Construction of Drainage Canals

Sealed proposals for the construction of drainage canals in the Moseley Creek Drainage District, near Dover, N. C., will be received by the Drainage Commissioners of said district at Dover, N. C., up to 12 o'clock M. February 16, 1912, and at that time they will be publicly opened and read. Each proposal shall be enclosed in a sealed envelope and addressed to the Chairman of the Board of Drainage Commissioners of the Moseley Creek Drainage District, Dover, N. C., and endorsed "Proposal for Constructing Drainage Canals."

Each proposal shall be accompanied by a certified check drawn payable to the order of the Chairman of the Board of Drainage Commissioners, in the amount of one thousand dollars (\$1000); this check to be an evidence of the good faith of the bidder, and to be held as liquidated damages in case the award is made and the contract and bond are not entered into promptly. Checks of unsuccessful bidders will be returned as soon as the award is made.

Specifications and blank forms of proposal will be furnished upon application, and a full set of maps, plans and profiles may be seen at the office of the Drainage Commissioners, or at the office of the Engineer to the Board of Commissioners at New Bern, N. C.

The approximate length of these canals is 14 miles, and the approximate yardage to be excavated is 415,000.

The right is reserved to reject any and all bids.

G. V. RICHARDSON, Chmn. Bd. Commissioners.

R. R. EAGLE, Engineer.

## Construction of Waterworks Extension

Sealed proposals will be received by the Board of Mayor and Aldermen of the City of Johnson City, Tennessee, until 7 P. M. Thursday, February 1, 1912, for furnishing material, machinery and labor for building a gravity water supply, embracing approximately twelve and one-half miles of sixteen (16) inch cast-iron pipe with appurtenances, one-half mile of eighteen (18) inch, one and one-eighth miles of ten (10) inch cast-iron pipe line, and one 4,000-gallon reservoir.

Plans may be seen at the office of the City Commissioner or the Consulting Engineers, and specifications may be obtained from either.

Certified check on a local bank for five per cent. of the amount of the bid will be required.

The right is reserved to award separately or as a whole the numbered items shown in the proposal blank; to reject any or all bids, or to accept any bid that may be to the best interest of the city.

P. F. McDONALD, City Commissioner.

WM. R. FOUDEUR, Recorder.

THE J. B. McCRAHY CO., Consulting Engineers.

Third National Bank Building, Atlanta, Georgia.

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# Tarvia

*Preserves Roads  
Prevents Dust~*



U. S. Naval Training Station, Great Lakes, North Chicago, Ill., treated with Tarvia X.

## Tarvia at a Government Station

**T**HE new Great Lakes Naval Training Station near Chicago rivals Annapolis and West Point in its fine equipment and the thorough and finished development and beautification of the property.

It has many macadam roadways, some of which carry especially heavy traffic, built with Tarvia X, for the purpose of keeping down maintenance costs.

In appearance, these roads resemble sheet asphalt, being clean, firm under foot and free from dust.

In durability, they will, of course, far exceed ordinary macadam, for they are bonded with the dense viscid Tarvia for several inches in depth.

The Tarvia fills the voids, keeps the stone from creeping or shifting under the weight of traffic, eliminates abrasion due to internal movement of the stone, excludes water and frost, and best of all, permits the use of the more durable large stone close to the surface.

It has long been recognized by engineers that large stone pulverized and wore away much more slowly than the carpet of fine screenings with which ordinary macadam roads must be covered, but the tendency of the large stone to shift and ravel has previously prevented the use of the large stone in this way.

Tarvia X makes it possible to use materials to vastly better advantages and preserves the road so long that the cost of the Tarvia itself is more than paid for.

The government engineers chose Tarvia for economy. Incidentally, they secured dustlessness, a reduction of noise, freedom from mud and an improved appearance.

*Illustrated Booklets on request to nearest office.*

## BARRETT MANUFACTURING COMPANY

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Boston

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New Orleans

Cleveland  
Seattle

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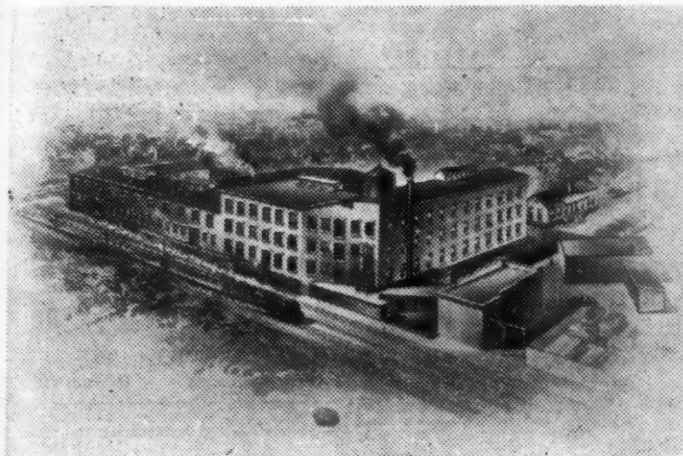
Canadian Offices:—Montreal, Toronto, Winnipeg, Vancouver, St. John, N. B., Halifax, N. S.





## Special Advertisements of General Interest.

### FOR SALE OR LEASE



Manufacturing plant or warehouse on Bellwood Avenue, Southern Railway and A. B. & A. R. R., containing two acres of land, with 600 feet railroad frontage, three-story brick mill constructed building, 42,000 square feet floor space; elevator, electric light plant, steam heat and modern plumbing. Has 100 H. P. engine and 125 H. P. boiler. Office building separate. Owner retiring on account of ill health.

H. M. BEUTELL, Owner - - ATLANTA, GA.

### ASSETS REALIZATION COMPANY

Capital \$10,000,000

*Will loan on security requiring special investigation or close supervision, and not available for bank loans. Large enterprises financed. Prompt investigation of security offered, whatever its character or location.*

Correspondence invited

NEW YORK PHILADELPHIA  
35 Broad St. Lafayette Bldg.

CHICAGO

First National Bank Building

### BRICK PLANT IN CENTRAL FLORIDA

FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"

Care Manufacturers Record.

### Fully Equipped Knitting Mill

FOR SALE OR LEASE

Two-story substantially built brick building, with engine and boiler, situated in one of the fast growing cities of North Carolina, both rail and water shipping facilities, and good opportunity for right party. Address BOX 308, Fayetteville, N. C.

### Salt—Sulphur—Fuller's Earth Proposition

We own and control extensive tracts of land in East Texas, on which we have found Rock Salt, deposits of Sulphur and Fuller's Earth. We desire to correspond with parties interested who would develop these holdings upon a business basis. We would sell or lease.

WOLDERT GROCERY CO.,  
Tyler, Texas.

### VALUABLE PROPERTY FOR SALE

By virtue of a decree of the Superior Court of Clay County, North Carolina, in the case of Stocks vs. Isbell Corundum Company, the property of the Isbell Corundum Company will be sold at the Courthouse door in Hayesville, Clay County, North Carolina, at public auction to the highest bidder, subject to confirmation by the court. The property consists of 800 acres valuable timber land in Clay County, North Carolina, and on the property is a valuable deposit of high-grade corundum. There is also on the property a large building filled with machinery already set up for cleaning corundum and a large engine and boiler little used. Property may be sold as a whole or in parcels to suit purchasers. Terms cash. For further information address Edmund B. Norvell, Murphy, N. C., or F. S. Johnston, Franklin, N. C. This 21st December, 1911.

F. S. JOHNSTON,  
EDMUND B. NORVELL,  
Commissioners.

### Complete Planing Mill Plant FOR SALE

ON FEBRUARY 20, 1912

Located at Lillington, N. C., on Raleigh & Southport Railroad; 15 acres land; main building, two drykilns, boiler building, three tenement-houses, two planers. Capacity, 15,000 feet daily; ready to operate. Terms sale, cash. Date sale, February 20, 1912. Ten per cent. deposit required successful bidder. Private bids considered between now and sale.

E. G. DAVIS, Trustee,  
Fayetteville, N. C.

### WOOD-WORKING PLANT FOR SALE

Entire plant of the Philadelphia Veneer & Lumber Co., Inc., consisting of land, buildings and machinery. Machinery consists of engines, boilers, pumps, heaters, bend mill, short-log mill, veneer slicers, dryers, veneer saw, planers, etc., complete outfit for the making of cigar-box lumber and shooks.

Splendid location for a furniture, chair or woodworking plant. Right in the heart of the Appalachian forest region. Cheap lumber and labor. White help. Located on two trunk lines. For further particulars address

Philadelphia Veneer & Lumber Co., Inc.  
Knoxville, Tennessee.

### BRICK FACTORY BUILDING and FACTORY SITE FOR LEASE OR SALE ON EASY TERMS

Two-story brick factory building 200x60 feet, with ells, giving total floor space 30,000 sq. ft., with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers. Site 385x200 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroad and steamboat lines.

BARTON MYERS,

NORFOLK, VA.

### J. T. KIMBROUGH WE LOCATE MANUFACTURERS REAL ESTATE

409-10 Atlanta National Bank Bldg.

ATLANTA, GA.

### Modern Foundry & Machine Shop A BARGAIN

Having bought at receiver's sale a modern Foundry and Machine Shop, including a complete line of Engine and Sawmill Patterns and an amount of Mill Supplies, I am offering it at a bargain. Located in the South, close to iron and coal, with three railroads and non-union labor. This is a desirable plant for the manufacture of any line of machinery.

Address "H,"

Care Manufacturers Record.

### COMPLETE SAW MILL PROPERTY FOR SALE

Sawmill property at Ford River, Mich., consisting of three-hand-saw mill, shingle mill, tie and post mill, lath mill, docks and trams, blacksmith shop and machine shop all stocked with tools, large store and office building, large boarding-house, large barns, sixty-three houses, lands, etc., all of which will be sold at a bargain. Apply to

THE I. STEPHENSON COMPANY,  
Wells, Delta County, Mich.

### FACTORY SITES FARM LANDS

Business Opportunities, Timber Lands, Realty Investments

We will take pleasure in submitting information pertaining to either of the above departments.

S. L. NUSBAUM & CO.

600 Citizens' Bank Bldg. Norfolk, Va.

### Complete Saw Mill Plant, Dry Kiln and Logging Equipment FOR SALE

Mill has a daily capacity of 35,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 35 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address

ALBERT FENDIG & CO., Brunswick, Ga.

## BALTIMORE

can now boast of an Electric Power Service that is unsurpassed by any other city.

The largest single Storage Battery in the world has just been installed here and that completes a system that absolutely precludes any interruption of service to the business districts.

With the great water power station at McCalls Ferry, Pennsylvania, and the steam generating plant at Westport, this city has an ample Electric Power supply for years to come.

Besides this Baltimore manufacturers have the Cheapest Electric Power on the Atlantic Seaboard.

These facts are of vital interest to outside manufacturers. Low Power rates and an unfailing supply. Think them over.

We will be pleased to send you any statistics or other data about our city that you may wish,—lists of available factories and plant sites included. Write to

INDUSTRIAL POWER DEPARTMENT

The Gas & Electric Company  
BALTIMORE

# Bargains in Machinery and Supplies.

## DYNAMOS and MOTORS

### Direct Connected Units

### Belted Generators

### Alternating Current Motors

### Direct Current Motors

### 300 OF THEM

Thoroughly overhauled and fully guaranteed.

In stock for immediate delivery.

We Buy, Sell, Repair, Rent or Exchange.

## E. LEVENE & CO.

124 N. 3rd. St., Philadelphia

## LIGHTING DYNAMOS

40-light General Electric, speed 1350.  
75-light Allis-Chalmers, speed 1300.  
600-light Triumph, speed 1400.  
150-light Westinghouse, speed 1200.  
200-light Westinghouse, speed 875.  
250-light Westinghouse, speed 825.  
300-light General Electric, speed 900.

Condition Guaranteed.

110-volt. 250-volt. 500-volt.  
A. C. and D. C. Motors and Generators in stock. Send for Bargain List.  
MILLER-OWEN ELECTRIC CO.,  
217-219 First Ave., Pittsburgh, Pa.

## BARGAIN Woodworking Machinery

24" x 12" four-side

### FAY ENDLESS BED PLANNER

In condition to run immediately.

JAMES H. BROWN, 287 Clifton Place, Brooklyn, N. Y.

## WATER TUBE BOILERS

Two 250 H. P. "Heine," complete, with all attachments, good for 140 lbs. pressure. Will make price low f. o. b. cars Philadelphia.

L. F. SEYFERT'S SONS, INC.,  
437-39 N. Third Street, Philadelphia.

## FOR SALE CHEAP

Four 100 H. P. Portable Return Flue Boilers. 12"x15" Erie City Engine. 12"x18" Birmingham Engine. 18"x22" H. S. & G. Engine. R. Hand Knife Grinder. 10" Outside Molder.

Tampa Machinery Exchange, Tampa, Fla.

Engines, Generator and Deep Well Steam Heads

### FOR SALE. CHEAP.

1 9x8 Eriecco Engine, direct connected to a 30 K. W. 125 V. D. C. Generator.  
1 13x12 Eriecco Steam Engine.  
1 10x36 Hill Deep-Well Steam Head.  
1 6x36 Cook Deep Well Steam Head.  
All the above in fine condition.  
COGHLIN MACHINERY & SUPPLY CO.,  
Toledo, Ohio.

We have for sale the following

### Bundy Steam Traps:

1 No. 105 Trap, 125 gallons per dump.  
1 No. 106 Trap, 295 gallons per dump.  
1 No. 108 Trap, 700 gallons per dump.  
Temperature 180 degrees.

These traps have never been used and are in perfect condition. Make offer on one or all.

MEMPHIS ARTESIAN WATER DEPARTMENT  
Memphis, Tenn.

## Second-hand Electric Motors

We have the largest stock of second-hand electric motors and generators in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds. Send for our "Monthly Bargain Sheet," showing complete stock with net prices. All machines guaranteed in good order.

GREGORY ELECTRIC CO.,  
Sixteenth and Lincoln Sts., Chicago, Ill.

## Engines, Boilers, Generators, etc.

1 22 and 40-hp Corliss Cross Compound.  
2 24x48 Corliss Engines.  
1 22 and 36-hp Tandem Corliss.  
2 Phoenix Tandem 12 and 20-hp Engines.  
1 Allis Corliss Tandem, 22 and 24-hp Engines.  
Engines direct connected to generators.  
SEND for list and prices.  
THE DORNER RAILWAY EQUIPMENT CO.  
Irving Park Ave., corner Southport.  
Chicago, Ill.

## DYNAMOS and MOTORS

I buy, sell, rent and exchange.  
The best and the cheapest.  
Let me know what you have for sale and what you want to buy.

THOMAS YEARSLEY

211 N. 3rd Street Philadelphia, Pa.

### FOR SALE

One 20"x24"x13 1/2"x20" Norwalk Compressor. One 13"x12" Ball Engine. One 15"x14" Ball Engine. One 20"x48" Corliss Engine. One 13"x16" Center-Crank Slide-Valve Engine. One 12 1/2"x15" Hoisting Engine, double drums 54" diameter. One 7"x10" D. C. D. D. Hoisting Engine and Boiler. Three 5"x8" Double-Drum Hoisting Engines and Boilers. One 6 1/2"x10" Double-Drum Hoisting Engine and Boiler. One Deane 12 and 20"x10 1/2"x12" Duplex Piston Pattern Pump.  
CHAS. T. LEHMAN, Birmingham, Ala.

### ELEVATORS

Generators and Motors  
engines, boilers and pumps. Machine Tools.  
Contractor's Equipment. Machinery Bought, Sold and Appraised.

RIKER MACHINERY CO.

110 WEST 34th ST., NEW YORK

J. P. Mulholland, Manager

## Do You Need MACHINE TOOLS?

We have a large and well-selected stock in our warehouse at prices that will materially reduce your equipment bills. Let us give you details of some of the following tools.

### LATHES

1 60"x16" "Fitchfield," internally geared face-plate.....\$1400.00  
1 48"x12" "Fitchfield," internally geared face-plate.....1260.00  
2 42"x32" "Draper," one has taper attachment, \$1400.00 each; taper \$100.00 extra.  
1 40"x18" "Fitchfield," internally geared face-plate.....1500.00  
1 38"x16" "Fitchfield," internally geared face-plate.....1250.00  
1 33"x16" "Fitchfield," internally geared face-plate.....700.00  
1 32"x32" "Fitchfield," internally geared face-plate.....1200.00  
1 30"x14" "Fitchfield," internally geared face-plate.....475.00  
1 20"x10" "Perkins".....400.00  
1 22"x10" "Fitchfield".....350.00  
1 16"x6" "LeBlonde".....250.00  
3 14"x6" "LeBlonde," each.....225.00

### PLANERS

1 53"x53"x23 1/2" "Betts," one head.....1000.00  
1 37" "Bullard," "American," open side...2250.00  
1 40"x40"x10" "Powell," one head.....900.00  
2 20"x20"x6 1/2" "Sellers," one head.....190.00

### RADIAL DRILLS

1 7 1/2" "Bickford," plain.....650.00  
1 54" "Bickford," universal.....625.00  
1 54" "Bickford," plain.....750.00

### BORING MILLS

1 60", one head, vertical.....400.00  
1 37" "Bullard," two heads, vertical...800.00  
1 54" "Newton," horizontal.....450.00

### PIPE MACHINES

1 10" "Curtis & Curtis".....250.00  
1 6" "Cox & Sons".....400.00  
1 No. 2 "Eaton, Cole & Burnham," 1 to 4".....350.00  
1 No. 2 "Bignall & Keeler".....240.00

### PRESSES

2 No. 2 1/2 pattern "Phila. Machine Co." 165.00  
1 No. 2 "Bliss".....450.00  
1 P-1 "Ferracute".....115.00

### HAMMERS

1 1500-lb. steam "McDougall & Potter".....900.00  
1 800-lb. steam drop "Bement-Miles".....650.00  
1 600-lb. "Champion Beaudry".....450.00  
1 400-lb. "Champion Beaudry".....350.00  
1 150-lb. belt-power "Scranton".....325.00

### GEAR CUTTER

1 7 1/2" "Gould & Eberhardt".....650.00  
Our large, well-planned and lighted warehouse makes critical examination of any tool easy and affords the best facilities for quick and safe handling of heavy pieces.

L. F. SEYFERT'S SONS, Inc.  
437-439-441 N. 3d. St., Philadelphia

## SPIRAL PIPE

### FOR SALE CHEAP

9000 feet Galvanized Spiral Riveted Flanged Pipe, size 9". Heavy gauge, in first-class serviceable condition, suitable for dredge work, air pressure, etc. Will make very attractive price in quantities.

MARINE METAL & SUPPLY CO.

167 South Street,  
NEW YORK CITY.

## Generators Engines Machine Tools Pipe

H. KLEINHANS

Oliver Building Pittsburgh, Pa.

In revising our manufacturing equipment, we find the following first-class

### Used Machine Tools

which we offer at attractive prices

### ENGINE LATHES

14 in. x 6 ft. Flather, Q. C. G.  
16 in. x 6 ft. Hendey, Q. C. G.  
15 in. x 6 ft. Pratt & Whitney, Q. C. G.  
16 in. x 8 ft. Reed.  
18 in. x 6 ft. Lodge & Shipley, Q. C. G.  
18 in. x 8 ft. Lodge & Shipley, Q. C. G.  
18 in. x 10 ft. Lodge & Shipley, Q. C. G.  
20 in. x 8 ft. Lodge & Shipley, Q. C. G.  
20 in. x 10 ft. Lodge & Shipley, Q. C. G.  
22 in. x 14 ft. Lodge & Shipley, Q. C. G.  
24 in. x 8 ft. Lodge & Shipley, Q. C. G.  
24 in. x 10 ft. Lodge & Shipley, Q. C. G.  
26 in. x 10 ft. Lodge & Shipley, Q. C. G.  
36 in. x 12 ft. Lodge & Shipley, Q. C. G.  
36 in. x 14 ft. New Haven.

### SPECIAL LATHES

24 in. x 7 ft. Lodge & Shipley Chucking Lathes.  
No. 3 Lodge & Shipley Rapid Reduction Lathes.

### PLANERS

36 in. x 36 in. x 10 ft. Sellers.  
METAL SAWS  
No. 3 Nutter-Barnes Cold Saw.  
Franklin Cold Saw, 3 1/2 in. capacity.  
Globe Power Hack Saw, 3 in. capacity.  
Universal Power Hack Saw, 6 in. capacity.

### MISCELLANEOUS MACHINES

Whitton Centering Machine.  
Mumford 12 in. x 40 in. Molding Machine.  
Write for complete description with prices of machines in which you are interested.

THE LODGE & SHIPLEY MACHINE TOOL CO.  
CINCINNATI, OHIO

## SAW MILL MACHINERY

### FOR SALE

One mile 24-pound Steel Rails.  
One Cylinder Barrel Stave Saw.  
One Stave Jointer.  
One Heading Machine.  
One Gang Edger Saw.  
One Power 28" Surfer and Jointer.  
One Power 44" Circular Resaw.  
One 35 H. P. Sawmill, complete, with Gang Edger.  
One 25 H. P. Sawmill.

E. S. ADKINS & CO.,  
Salisbury, Md.

## ONE REAVES TRACTION ENGINE

### FOR SALE CHEAP

Twenty-five horse-power, cross-compound, in first-class condition. Reason for selling, soil is entirely too soft in this section of the country; absolutely no fault of the engine.

SAVANNAH LUMBER COMPANY,  
53d and Montgomery Sts., Savannah, Ga.

### FOR SALE

One (1) Sturtevant Single Exhaust Fan with direct-connected Vertical Steam Engine, suction 36" dia., upward outlet 30" dia.  
One (1) Clayton Air Compressor, 6"x10"x6", steam driven.  
One (1) Hydraulic Press, plates 14" wide, 24" long, ram 12" diameter, 12" stroke, pump 5"x7" stroke.

CHAS. ROSS & SON CO.,  
148-156 Classon Ave., Brooklyn, N. Y.

## AIR COMPRESSOR

### FOR SALE.

One Sullivan Straight-Line Steam-Driven Air Compressor, cap. 174 cu. ft. free air per min., complete, with speed and pressure governor, in A-1 condition, at a bargain.

BYRD BROTHERS, Salisbury, N. C.

## SECOND-HAND

# Machine Tools

### LATHES.

18x8 Lodge & Shipley, compound rest.  
9"x44" Star, plain rest.  
12"x5" Prentiss Bros., R. & F.  
15"x6" Flather, compound rest, P. C. F.  
16x6 Prentiss Bros., compound rest, P.C.F.  
16x6 Reed, compound rest, taper and turret.  
20x10 Prentiss, compound rest, P. C. F.  
20x6 Fay & Scott, compound rest, P. C. F.  
24x14 Reed, high speed.  
27x12 Pratt & Whitney, C. R., P. C. F.  
28x10 Putnam, C. R., P. C. F.  
28x10 Gleason, compound rest, taper.  
30x12 Pond, C. R., P. C. F.  
32x17 Bement-Miles, C. R., triple geared.  
36x16 Reed, compound rest, P. C. F.  
40x18 Newark, triple geared, C. R., P. C. F.  
46x38 Fitchburg, T. G., C. R., P. C. F.  
102x35 Bement, compound rest, T. G.  
21x14 Powell, compound rest, P. C. F.  
26x13 Fitchburg, compound rest, P. C. F.  
54x20 Fitchburg, C. R.

No. 2 Pratt & Whitney, Lincoln pattern.  
No. 3 Brown & Sharpe, plain.  
No. 7 Becker-Lincoln.  
No. 3 Cincinnati, plain.  
No. 12 Brown & Sharpe, manufacturers.

### DRILLS.

28" Lodge & Davis, sliding head.  
28" Barnes, sliding head.  
36" Bickford, radial.  
No. 25 Foote-Burk, high speed.  
F 12" Baker Bros.  
10-spindle Gardam, adjustable.  
4-spindle Foote-Burk, gang.  
25" Snyder, sliding head, tapping attachment.  
7-spindle Slate, bedstead.

### SHAPERS.

9" Gould & Eberhardt.  
20" and 24" Hendey, friction.  
13" Cincinnati, crank.  
30" Gould & Eberhardt, crank.

### MISCELLANEOUS.

Boring Mill, 37" Bullard, 2 heads.  
Grinder, Sellers, universal tool.  
Planer, 24x24 Pease, 1 head.  
Planer, 30x30x10 Gleason, 1 head.  
Planer, 36x36x12 Betts, 4 heads.  
Planer, 48x48x15 Farrell, 1 head.  
Planer, 48x48x15 Pond, 3 heads.  
Boring Mill, 10" Pond.  
Grinder, Walker, electric surface.  
Grinder, No. 2 1/2 Bath, universal.  
Gas Engine, 8 H. P. Fairbanks.  
Hammer, 50 lbs. Bradley, compact.  
Hammer, 1000 lbs., Pratt & Whitney, drop.  
Gear Cutter, 16x4 Gould & Eberhardt.  
Grinder, 12x42 Landis, universal.  
4" Saunderson Pipe Machine.  
Slotter, 16", Bement, motor driven.  
No. 2 Giant Keyseater.  
Brake, 8" Niagara.  
Pipe Machine, 3" Jarecki.  
Grinder, 20" Blount Water Tool.

### SCREW MACHINES.

2x24 Jones & Lamson, flat turret.  
20x6 Bardner & Oliver, friction head.  
No. 2 3/4" Warner & Swasey, wire feed.  
No. 2 3/4" Garvin, wire feed, friction head.  
No. 1 Garvin, wire feed.  
3/4" National Acme, automatic.  
1 1/4" Gridley, automatic.  
No. 6 Brown & Sharpe, friction head.  
1" Smurr & Kamen, wire feed.  
1/2", 3/4", 1" and 2 1/2" Pratt & Whitney automatics.  
No. 2 3/4" Pratt & Whitney, wire feed.  
No. 1 7-16" Pratt & Whitney, wire feed.

### MILLERS.

No. 15 Brainerd, universal.  
No. 4 1/2" Becker, plain.  
No. 3 Cincinnati, universal.  
No. 2 Brown & Sharpe, universal.  
No. 2 LeBlonde, plain, back gears.

## Prentiss Tool & Supply Company

SINGER BUILDING  
149 BROADWAY

NEW YORK  
N. Y.



### SPECIAL BARGAINS CHEAP BEFORE REMOVAL

Two 150 K. W. 250-volt D. C. Crocker-Wheeler Generators, direct connected to 14 1/2" x 24" x 16" Wright Tandem Compound Engines, 200 R. P. M.  
One 100 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14 1/2" x 14" Wright Horizontal Engine.  
One 1000-gallon Blake Underwriters' Fire Pump, size 18" x 10" x 12".

#### BOILERS

Three 72" x 20" Horizontal Return Tubular, 175 H. P. each, 125 lbs. steam.  
Three 66" x 18" Horizontal Return Tubular, 125 H. P. each, 110 lbs. steam.  
Two 66" x 18" Horizontal Return Tubular, 100 H. P. each, 110 lbs. steam.  
One 54" x 16" Horizontal Return Tubular, 70 H. P., 100 lbs. steam.  
One 150 H. P. Manning Vertical, 125 lbs. steam.  
Large stock of vertical types, all sizes.

#### ENGINES

30" x 48" Watts-Campbell Corliss.  
28" x 48" Reynolds Double.  
28" x 48" Corliss.  
24" x 44" x 48" Cooper Tandem Compound.  
22" x 48" Greene.  
20" x 48" Buckeye.  
20" x 48" Greene.  
16" x 42" Allis.  
14" x 36" Allis.  
14" x 36" Russell.  
12" x 25" x 48" Greene.  
Large stock of smaller sizes; also Automatic and Plain Slide-Valve, Vertical and Horizontal.

#### HOISTING ENGINES

11" x 14" Flory, D. C., S. D.  
10" x 10" D. C., S. D. link motion.  
8 1/2" x 12" Webster, Camp & Lane, D. C., S. D.  
7 1/2" x 10" Lidgerwood, D. C., D. D., 40" x 7" boiler.  
7" x 8" Copeland & Bacon, D. C., S. D.  
6 1/2" x 10" Davis, S. D., S. D.  
6 1/2" x 10" Mundy, D. C., D. D.

#### WESTINGHOUSE ENGINES

One 13" x 22" x 13" Westinghouse Compound, 125-200 H. P.  
One 12" x 20" x 13" Westinghouse Compound, 100-160 H. P.  
One 11" x 19" x 11" Westinghouse Compound, 80-130 H. P.  
Two 10" x 18" x 10" Westinghouse Compound, 65-100 H. P.  
Large stock of Junior and Standard types.

PUMPS, GAS AND GASOLINE ENGINES, AIR COMPRESSORS, HEATERS, STONE CRUSHERS AND GENERAL EQUIPMENT.

#### PLANERS

34" x 27" x 7" Mattawan. 25" x 25" x 6" Harrington.  
28" x 26" x 7" Wheeler. 26" x 26" x 6" Harrington.  
20" x 30" x 8" Pease. 27" x 27" x 6" New Haven.

#### LATHES

48" x 30" Triple Geared Lathe, raising blocks to 56".  
36" x 14" Screw Cutting Lathe.  
24" x 16" Triple Geared.  
24" x 10" Field.  
22" x 15" Harrington.  
20" x 10" 6" Rahn-Carpenter.  
20" x 10" Rahn-Carpenter Gap Lathe.  
20" x 10" Harrington, taper attachment.  
18" x 10" Fitchburg.  
16" x 8" Bradford.  
16" x 8" Rahn-Carpenter.  
16" x 8" Flathead.  
16" x 8" Porter.  
16" x 8" Prentice.  
15" x 8" Carroll-Jameson Lathe.  
15" x 8" Carroll-Jameson Lathe.  
15" x 8" Carroll-Jameson Quick Change Gear Lathe.  
15" x 8" Carroll-Jameson Plain Lathe.  
14" x 8" American, with gap.  
14" x 8" Prentice.  
13" x 8" Monarch Lathe.  
9" South Bend Foot Power Lathe.

#### MILLING MACHINES

No. 2 A Owen Full Universal, with vertical spindle attachment.  
No. 2 Cincinnati Universal Milling Machine, with vertical attachment.  
Two No. 2 Van Norman Duplex Milling Machines.  
No. 2 1/2 Pratt & Whitney Horizontal Miller, table 11" x 5".  
About 20 Lincoln Type Milling Machines.

#### SHAPERS

28" Gould & Eberhardt.  
20" x 30" Pedrick & Ayer, open side.  
20" Steptoe. 16" Steptoe. 16" American.  
16" Cincinnati. 14" Steptoe.

#### PRESSES

PG-5 Ferracute Press.  
No. 2 and 2 1/2 Phila. Presses.

#### DRILLS

48" Gang Radial. 20" Plain.  
42" Hilles & Jones. 30" Morris Radial.  
36" Morris Radial. 32" Hamilton. 28" Barnes.

#### MISCELLANEOUS

Mitte & Merrill Keyseater.  
100-lb. Little Giant Hammer.  
25-lb. Little Giant Trip Hammer.  
50-lb. Little Giant Trip Hammer.  
1 1/2" Wells Bros. Bolt Cutter.  
26" x 12" Slab Miller.  
Two No. 5 Springfield Oscillating Surface Grinders.  
Two No. 14 Garvin Turret Lathes.  
800-lb. Bement-Miles Single Frame Steam Hammer.  
20" Espen Lucas Cold Saw.  
20" Wells Bros. Bolt Cutter.  
4" Oster Pipe Machine.  
6" Jarecki Pipe Machine.

**FRANK TOOMEY, Inc.**

127-131 N. Third St., PHILADELPHIA, PA.

## WE BUY AND DISMANTLE Factories Mills Machine Shops and all kinds of Industrial Plants

We are always in the market to buy

### Scrap Iron and Steel

OF EVERY KIND

**FRANK SAMUEL**

Harrison Building

15th and Market Streets

PHILADELPHIA, PA.

### CHEAP BEFORE REMOVAL

3 60" x 16 John Mohr Boilers.  
1 Standard Water-Tube Boiler.  
1 Heine.  
1 Berryman Heater.  
1 Armstrong & Sims Engine, 70 H. P.  
1 Ideal Engine, 160 H. P.  
1 Ideal Engine, 275 H. P.  
1 Armstrong & Sims Engine, 120 H. P.  
1 Ball Condensing Engine, 350 H. P.  
1 Ideal Engine, 350 H. P.  
1 Syracuse Engine, 150 H. P.  
5 Edison Generators, 50 K. W., D. C.  
2 Edison Generators, 45 K. W., D. C.  
Write quick for bargain prices.  
**AMERICAN IRON & SUPPLY CO.,**  
First Nat. Bank Bldg., Chicago.

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A well-known dealer advises  
"Keep in touch with the architects, contractors, etc., and the minute you hear of a new building or industry being planned, go after it. I have landed many jobs before my competitors knew the persons were going to build, or before the ground was broken."

"KEEP IN TOUCH"  
with new buildings, new industries and all new developments  
in the  
**SOUTH and SOUTHWEST**  
by means of the  
**Manufacturers Record**  
and our  
**Daily Bulletin**

## ENGINES at your own price

ALL OVERHAULED

20x48 Wheelock Corliss.  
14x20 Payne Improved Corliss, 4-valve.  
12x12 New York Safety.  
14x18 Erie Engine.  
4x6 High Speed Ver. Engine.  
No. 3 Pressure Blower.

The stock of a prominent dealer who is retiring.

**Pipe & Contractors Supply Co.**

3 DOVER STREET NEW YORK

### ENGINE BARGAIN

20x42 William Harris Corliss Engine; wheel 15 ft. by 24 in. face. About 100 ft. 23 in. Leather Belt. Feed-Water Heater. Oil Separator. Condition A-1. Price, f. o. b. cars, \$1000.

**Power—W. J. LINTON—Plants**  
90 West Street New York City

### Producer Power Plant FOR SALE

Consisting of  
1 100 H. P. Fairbanks-Morse Suction Gas Producer.  
1 Blower.  
1 Coal Elevator.  
1 100 H. P. Fairbanks-Morse Double-Cylinder Gas Engine.  
1 Circulating Water Pump, capacity 8000 gal.  
1 Altitude Gauge.  
1 Air Compressor and 5 H. P. Gasoline Engine.  
2 Air Tanks, capacity 100 gal. each.  
1 Air Gauge.  
1 Oil Filter.  
1 Crocker-Wheeler Electric Generator, 65 H. P., D. C., 110-volt.  
1 Switchboard.  
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It is in perfect condition and can be purchased for \$3500.

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1 16x42 Brown.  
1 18x42 Lane & Bodley.  
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1 22x48 Allis.  
1 24x42 Atlas. 1 28x54 Hamilton.  
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18x24 Ide Side-Crank.  
18x18 Armstrong & Simms.  
16x42 Allis Corliss.  
16x36 Allis Corliss.  
16x18 Ames C. C.  
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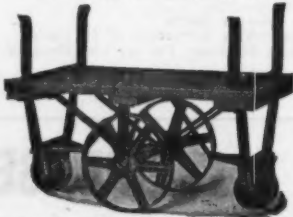
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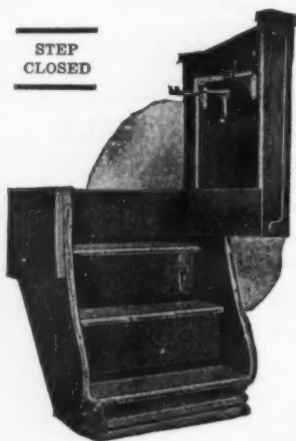


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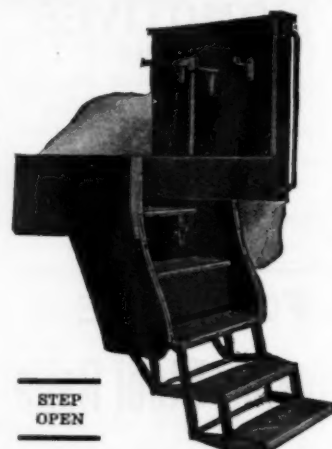
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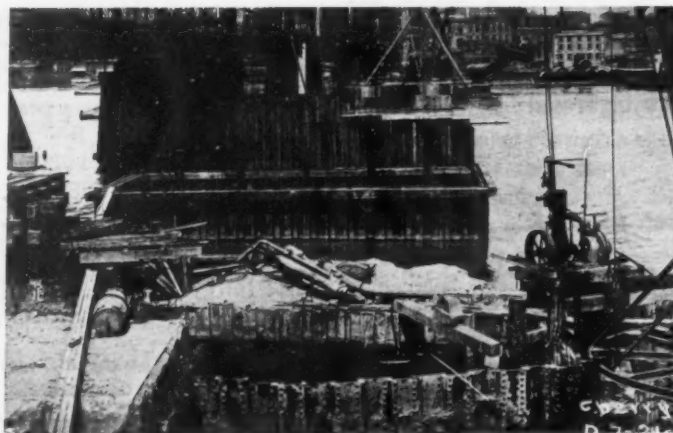
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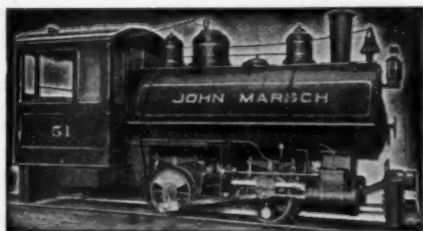
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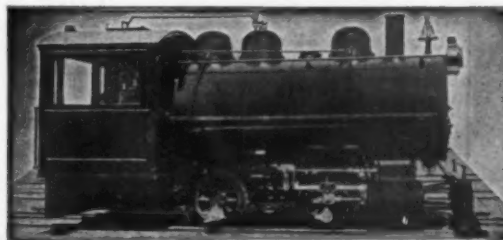
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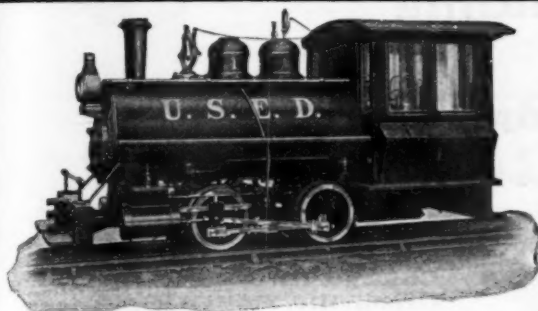
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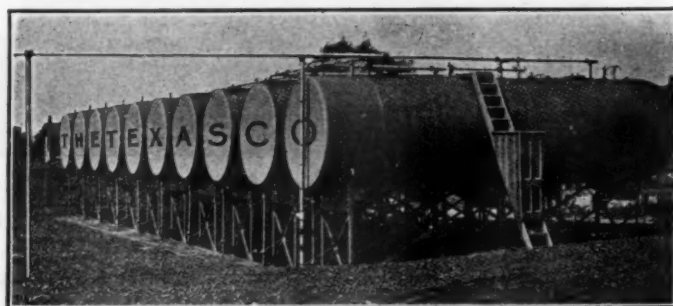
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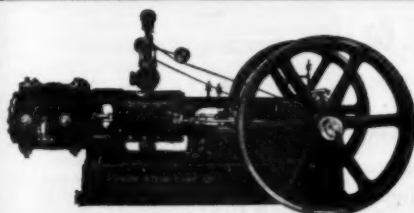
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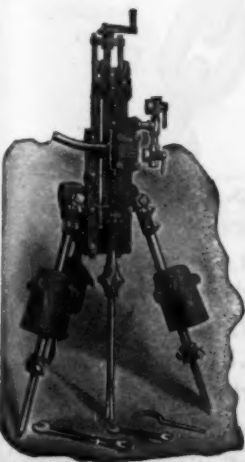
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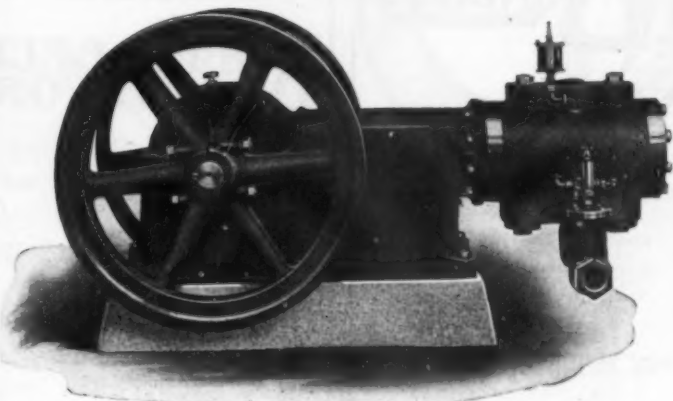
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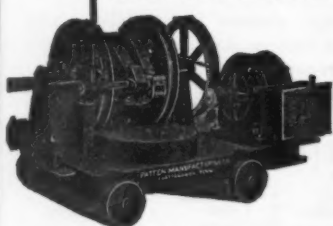


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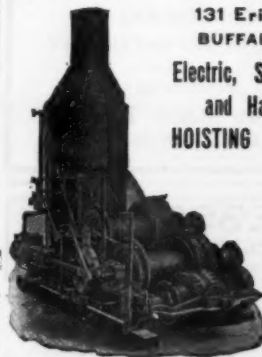
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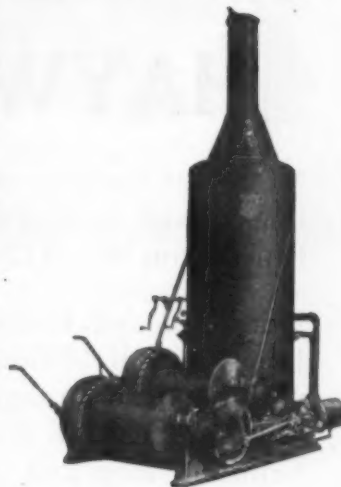
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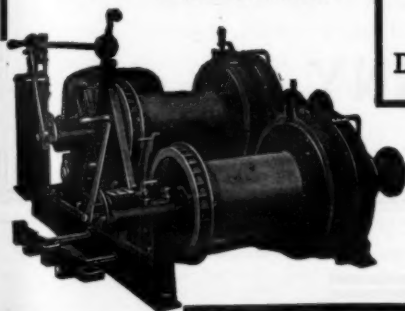
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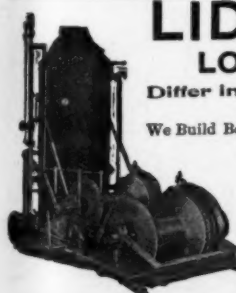
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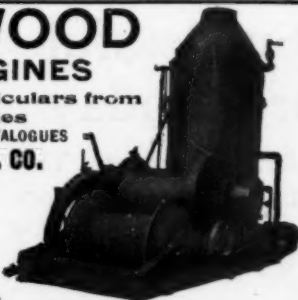
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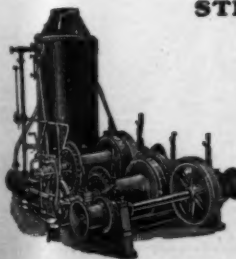
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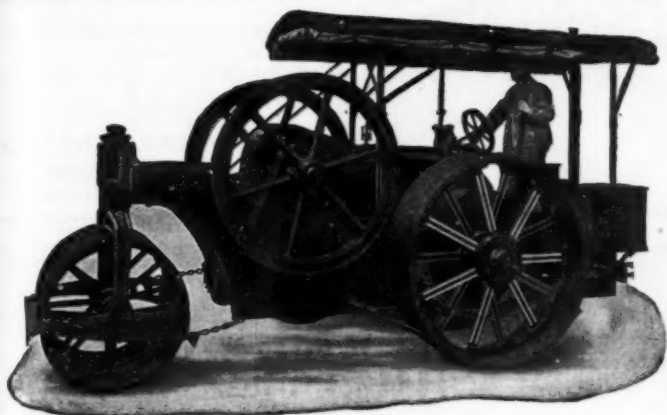
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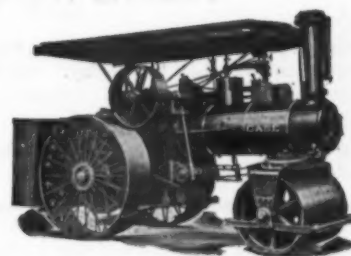
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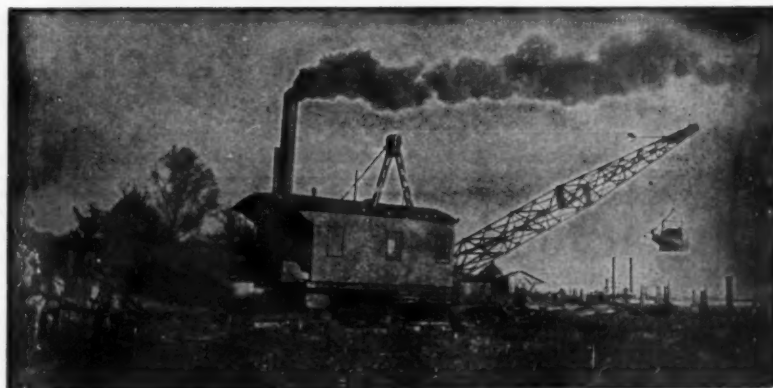
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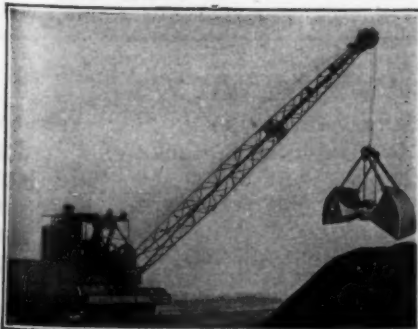
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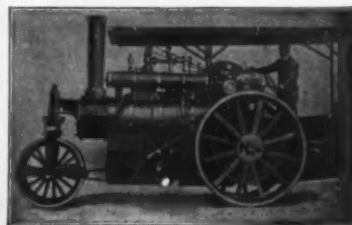
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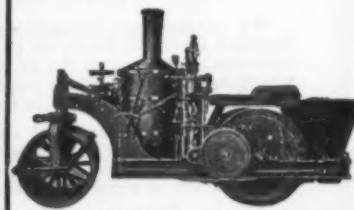
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The information this book contains will be found invaluable to Supervisors, Road Commissioners, State and Municipal authorities, and to owners of private estates.



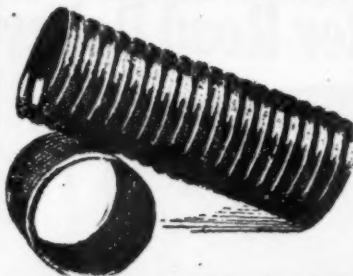
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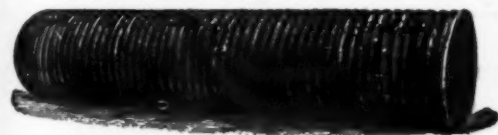
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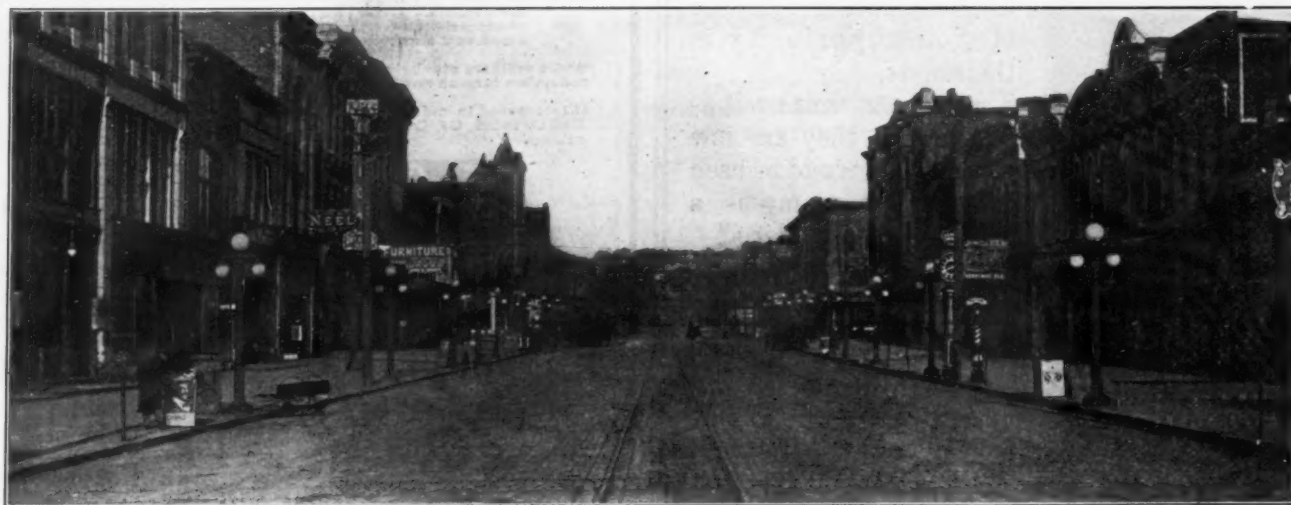
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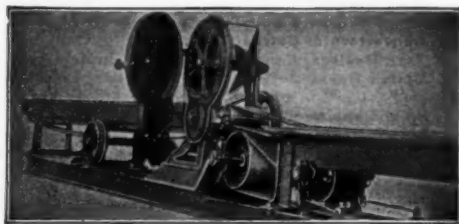
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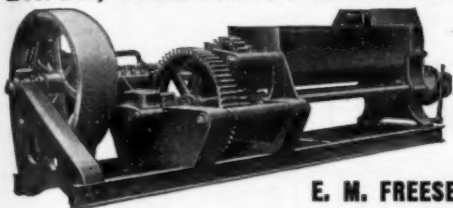
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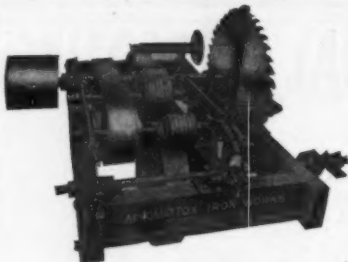


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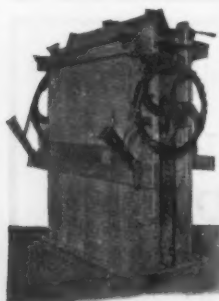
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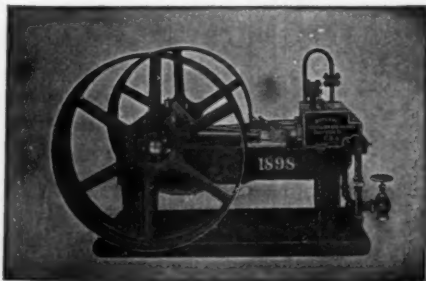
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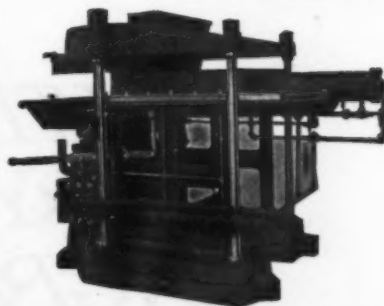
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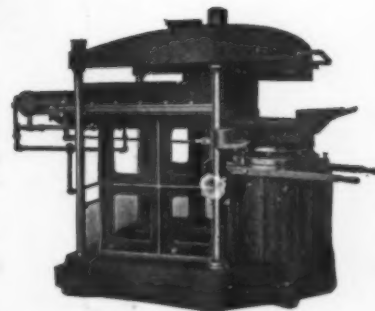
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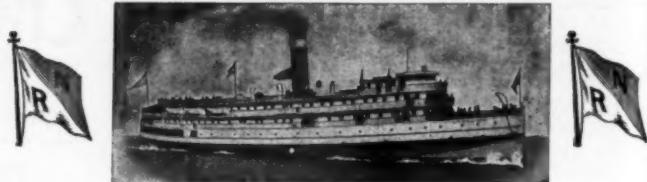
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THE LAND OF OPPORTUNITY. I am now offering factory sites which have access to all four railroads entering Savannah, and situated on the Savannah River, the only available water front near the city.

I have also a few choice farming propositions with railroad and water transportation. Write me for information.

FRANK WHITNEY, Room 207 Germania Bank Bldg., SAVANNAH, GA.

### WINCHESTER, VIRGINIA

The Center of the Greatest Apple Development  
in the United States

#### SPECIAL OPPORTUNITIES FOR

Cannery, Evaporating and Preserving Plants; Spray Material, Spray Wagons and Orchard Equipment Plants. Brick Plant wanted. On B. & O and Pa. Rys. Full information furnished.

J. E. Correll, Sec. Business Men's Asso., Winchester, Va.

### THE SOUTH'S "GARDEN SPOT" IS TRAVERSED BY THE ATLANTA, BIRMINGHAM & ATLANTIC RAILROAD

Lands are reasonable in price, very fertile and adaptable to the widest range of crops. Splendid climate and excellent church and school advantages. The territory is attracting general attention throughout the country.

Those desiring to locate will do well to communicate early. Inquiries are invited and literature treating fully with the population, soil conditions, etc., will be promptly mailed.

W. H. LEAHY

GENERAL PASSENGER AGENT

ATLANTA, GA.

### Attractive Factory Sites

ON THE

### ILLINOIS CENTRAL RAILROAD

For full particulars address the undersigned

Free books of information on farm lands issued by the  
Illinois Central Railroad

### ABOUT THE SOUTH

LOUISIANA RECLAIMED LANDS MAKE  
FERTILE FARMS  
THE YAZOO MISSISSIPPI VALLEY  
LIVE STOCK INDUSTRY IN THE SOUTH  
ALFALFA SUCCESSFULLY GROWN IN MISSISSIPPI  
MADISON COUNTY, MISSISSIPPI  
GRENADA COUNTY, MISSISSIPPI  
TISHOMINGO COUNTY, MISSISSIPPI  
TANGIPAHOA PARISH, LOUISIANA  
WEST TENNESSEE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 Park Row, CHICAGO, ILL.

### Opportunities for Coal Mining in "A Land of Resources"

The area embraced in the counties of Cumberland, Fentress, Roane, Overton and Putnam, on the Tennessee Central Railroad, constitutes the richest Coal Fields in the South. A minute and exhaustive study and measurement, together with the opening of several productive mines, demonstrates conclusively the extent and richness of this great Coal-bearing section.

There are thousands and thousands of acres of the finest Coal lands available for immediate mining that can be purchased at from \$10.00 per acre and up. This is opportunity.

Let me tell you more about it. Address

RUTLEDGE SMITH, Industrial Agent

TENNESSEE CENTRAL RAILROAD

Cookeville, Tennessee

### CLAYS IN THE SOUTH

The U. S. Government report shows that the value of brick and tile manufactured from clay in Pennsylvania for 1909 exceeded twenty million dollars.

We can show limitless deposits of superior clay in easy reach of reasonable priced electric power, where transportation facilities offer a very wide distribution.

An ideal location for a large plant. For particulars address

J. A. PRIDE

General Industrial Agent Seaboard Air Line Railway

NORFOLK, VIRGINIA

### MANUFACTORIES INVITED

Cheap Electric Power and Labor

Bedford City, Va., offers every advantage to industrial plants generally. Has cheap electric power which is very necessary to profitable manufacturing; has good supply of labor and ample raw material of various kinds within easy reach; and is on railroad connecting with all parts of the country and seaports. Good schools, churches, healthful climate and other facilities and comforts which make it a fine place of residence.

Detailed information gladly given by the

BOARD OF TRADE

BEDFORD CITY, VIRGINIA

### The Thriving Towns of Georgia

Offer opportunities and untold advantages for every line of business. Situated in the heart of the great COTTON BELT, in a country that is growing by leaps and bounds, and knows no hard times, they offer splendid inducements to merchants, manufacturers, professional men and every man that is willing to work. Correspondence solicited.

Georgia Bureau of Industries  
& Immigration

714 Century Bldg.

Atlanta, Ga.

THE  
West Point  
ROUTE

Atlanta & West Point R. R.

THE WESTERN  
RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock

And General Farming

Available Factory Sites, Abundance of Raw Material and Good Transportation Facilities.

Write for information.

R. E. LUTZ

General Agent

MONTGOMERY, ALABAMA

## Establish YOUR Business at the Base of Supplies

In Montgomery, Chattanooga, Rome, Atlanta, Macon, Columbus, Birmingham and a number of other cities and towns along the Central of Georgia Railway are factory sites which are ideal from every standpoint.

Your Iron, Coal, Coke, Timber and other raw materials are procurable at the lowest cost and in any quantities you need, as you need them, from immense supplies under your hand on every side. Efficient labor is plentiful, and water power abundant and inexpensive.

The prosperous, loyal community round about supplies a home market of great possibilities. Excellent shipping facilities open the whole country for promotion of sales on a successful competitive basis.

The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

Address J. M. MALLORY

Savannah, Georgia

INDUSTRIAL AGENT

# CENTRAL OF GEORGIA RAILWAY

VIRGINIA  
KENTUCKY  
TENNESSEE

## Locate Your Factory in the Southeast

GEORGIA  
No. CAROLINA  
So. CAROLINA

If you consider establishing any kind of manufacturing plant, and desire to reduce costs to a minimum, or to locate where markets are good and transportation facilities unsurpassed, you should by all means look into the advantages offered by the nine Southeastern States.

## Labor and Raw Material Plentiful

The raw materials, as iron, coal, coke, natural gas, and woods, are all obtained here at lowest prices.

Intelligent and reliable white labor is plentiful, and as living expenses are low the wage scale is proportionate.

The population and industrial development of the Southeast are increasing rapidly, creating excellent markets, and insuring a bright future for manufacturers who establish themselves early.

Full information regarding locations along the Southern Ry. System may be obtained of

M. V. Richards, L. & I. Agt.

Southern Ry., Room 52

Washington, D. C.

FLORIDA  
ALABAMA  
MISSISSIPPI

SOUTHERN Ry.  
Mobile & Ohio  
GA. So. & FLA.

### Texas City's Modern Docks

#### MR. MANUFACTURER

Why struggle for existence against the fearful odds of burning competition in a field where the natural resources are fast becoming exhausted, where transportation rates are high, and where the supply far exceeds the demand? Texas City, Texas, is the heart of the great Southwest development movement, and offers the manufacturer opportunities and advantages unexcelled.



"Where Rail and Water Commerce Meet"

**T**EXAS CITY is rapidly attaining to prominence as a commercial, industrial and shipping center. The reason for this is obvious. Texas City is the only practical mainland deep-water harbor on the Gulf Coast of Texas, and offers the manufacturer every advantage in the way of modern transportation convenience, both rail and water. He is thus enabled not only to assemble the raw material quickly and at a low cost, but it puts him in direct connection with the market of the world.

#### MR. MANUFACTURER

Are you aware, that as the Panama Canal is nearing completion, capital is looking with covetous eyes upon the vast resources of the Southwest? Do you know that this section is facing an era of commercial and industrial development such as has never been experienced in any section of the country before? It won't cost you much to investigate a little further, and it might show you a way to increase the earning power of your money.

**T**EXAS CITY is furnishing an outlet for the vast commerce of the South and Middle West, which is now seeking an outlet to the sea. Its dock, warehouse and terminal facilities are being developed along lines that are modern and comprehensive. In this respect its equal cannot be found in the South, and it is the peer of anything on the American Seaboard. It is the manufacturer who derives a direct benefit from this arrangement.

Literature Distributed by

Texas City Transportation Co.

Texas City, Texas



## Canning and Preserving Factories Should Thrive in Florida

The adaptability of Florida by reason of its splendid climate and soil for raising great quantities of all classes of fruits, vegetables and berries is well known.

According to the report of State Commissioner of Agriculture, the value of these products raised during the years of 1909 and 1910 was nearly \$13,000,000.

The steady influx of settlers to take up the inviting opportunities in truck raising and fruit growing is providing an increasing output of these products every year.

All of which combine to offer splendid openings for the establishment of canning and preserving factories.

Such plants located here would not be subjected to short seasons as in other sections of the country, because so many different products can be raised practically throughout the year.

Neither would such plants be in constant dread of the many possibilities of crop failure with which Northern canneries have to contend.

Then, too, the unusual variety and character of products possible from Florida's fruits, vegetables and berries, should certainly cause them to be in great demand throughout the country, if they were as intelligently marketed as the canned and preserved products of other States that have been made famous.

Florida raises some fruits of a kind in quality not produced by any other State in the Union, and if canned here in a practically ripened condition, would not be equalled for lusciousness and flavor.

Well located sites for canneries are not confined to one section in Florida, and there are good openings at many different points throughout the territory traversed by this railroad.

Full particulars bearing upon the possibilities for canning and preserving factories in Florida will be gladly given to those interested.

**Florida East Coast Railway**

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

# Productive Farm, Fruit and Grazing Lands Along the Clinchfield Route

One of the most important but neglected opportunities along the Clinchfield route is that of agriculture, extending from the growing of the staple crops of grains and grasses to the production of fruits and vegetables, and the raising of horses, cattle, sheep, swine and poultry.

All of these branches can be most profitably followed, because of the rich alluvial soil of the broad river bottoms and the no less rich loam of the coves and mountain sides, combined with ideal climatic and rainfall conditions.

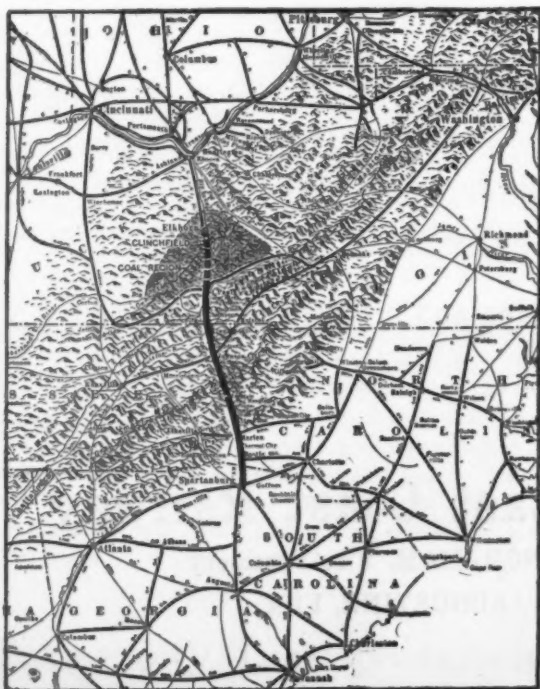
What its land can produce through intelligent cultivation has been conclusively proven by the Clinchfield's Industrial Department, through an experimental farm that had previously been worked for years, and was by no means the most desirable.

Splendid crops were raised, and it was shown that by proper effort certain success is assured.

It is especially timely to investigate the agricultural possibilities of these lands now.

The Clinchfield territory is developing remarkably, and there is an ever broadening demand throughout the country, served by the Clinchfield, for every product of the soil.

Lands are still cheap now—much cheaper than they will be when their full value shall become generally known.



*Full information will be gladly furnished covering the potentiality of these lands along agricultural fruit growing and stock raising lines.*

## Carolina, Clinchfield & Ohio Rwy.

*"THE ROAD OF OPPORTUNITY"*

J. J. Campion,  
V.-P. and Traffic Manager

R. F. Brewer,  
Industrial Agent

Johnson City, Tenn.



# Iron Ores in West Virginia

The production of pig-iron in the United States increased from 3,825,191 tons in 1880 and 9,202,703 tons in 1890 to 27,298,545 tons in 1910. During the same period the production of steel increased from 1,397,015 tons in 1880 and 4,277,071 tons in 1890 to 26,094,919 tons in 1910.

A growth so tremendous as this must be cared for by the steady expansion of the iron and steel producing capacity of the country. The time will come when every iron and steel plant with facilities for cheap production will be crowded to its capacity.

These facts are of vital concern to every State where iron ore and coking coal can be profitably assembled.

***West Virginia is fortunate in possessing valuable and extensive iron ore deposits.***

An investigation and report covering the extent and quality of West Virginia iron ores was made by Prof. G. P. Grimsley of the West Virginia Geological Survey, and he conservatively estimated the tonnage of the ore deposits in Pendleton County at about 30,000,000, and in Hardy and Hampshire Counties at 75,000,000, while an averaged analysis showed an iron content of 42 to 45 per cent.

These ores are especially valuable, not only on account of their nearness to the great Pittsburg iron and steel section, but also because of the proximity of an abundant supply of high grade coke and fluxing stone.

The deposits are conveniently located to the Baltimore & Ohio Railroad, which, with its modern equipment and broad reach, affords excellent facilities for wide distribution of iron and steel products.

***West Virginia therefore contains all the raw materials and shipping facilities necessary to iron and steel manufacture.***

From an economic standpoint the development of West Virginia iron ore deposits is bound to follow.

***The Baltimore and Ohio Railroad always co-operates to the fullest extent with the established industries in its territory, as well as those contemplating the erection of new plants and through its Industrial Department will gladly furnish detailed information regarding the opportunities available.***

## Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

# Mississippi's Industrial Growth

The figures given below, covering Mississippi's growth in the decade from 1900 to 1910, emphasize the fact that this State is keeping pace with the remarkable progress which other Southern States are making.

## MISSISSIPPI'S GROWTH

	1900	1910	Gain Per Ct.
<b>Factories:</b>			
No. of establishments.....	1,294	*2,598	100
Factory products, value .....	\$33,719,000	*\$80,555,000	139
Cotton Mills, spindles.....	75,122	145,468	97
Lumber cut, feet.....	1,202,334,000	2,122,205,000	77
Corn raised, bushels.....	25,231,998	66,256,000	160
Railroad mileage.....	2,934	4,234	44
<b>National Banks:</b>			
Resources.....	\$6,557,164	\$23,768,395	263
Capital .....	\$980,000	\$3,415,000	248
Individual deposits .....	\$3,878,626	\$12,768,304	229
Other banks, deposits.....	\$12,547,103	\$32,024,735	155
Property, true value.....	\$557,581,543	\$904,000,000	62

\*Figures of 1909.

Mississippi has long been considered as almost wholly an agricultural State, but a study of these figures, showing the splendid increase in number of factories, the value of products, the amount of timber cut, the number of cotton spindles, etc., indicate something of the industrial possibilities.

In lumber cut Mississippi ranks second among Southern States, and in this branch of industry there are opportunities in great variety for woodworking plants.

Mississippi raises over a million bales of cotton annually, and is surrounded by other large cotton growing States, so that there is an abundance of raw material for cotton manufacture.

The State's clays likewise offer a good field for investigation.

And the increasing amount of truck grown and cattle raised, as well as the adaptability of the State's soil for these, point out splendid openings for canning and meat packing plants.

While not possessing great coal fields of its own, Mississippi is quite close to those of Alabama and Tennessee, and can also draw upon the coal barged down the Mississippi from some of the country's leading coal fields.

Water power developments are available on many of the State's numerous rivers, all of which provide ample power for manufacturing purposes.

In connection with these suggestions, consider Mississippi's excellent transportation facilities for distribution.

Write for  
further facts  
bearing upon  
Mississippi  
opportunities  
in any line.

**Illinois Central Railroad**  
Chicago, Ill.

J. C. Clair,  
Industrial  
and  
Immigration  
Commissioner,  
Chicago, Ill.



## Unusual Advantages For Diversified Manufacture

That section of Tidewater Virginia, embracing the cities of Richmond, Norfolk, Petersburg, Portsmouth and Suffolk, possesses in an unusual degree the requirements needed for broad diversified manufacturing.

This is due principally to the complete rail and water transportation facilities centering in this territory and reaching out into those parts of the country that have limitless supplies of mineral, timber, agricultural and other raw materials in great variety.

These shipping facilities are equally good for distributing the finished products into the best markets of the land as well as to all parts of the world.

Labor too is plentiful, and when brought in soon becomes contented to abide here, because of a healthy climate, abundance of good food products and the hospitality of its people.

Power—a most important factor in so many industries can be obtained comparable in cost and efficiency with that produced anywhere.

If steam power is needed, the richest coal fields in America are tapped by three big railway systems having their tidewater termini in this section.

If electric power is wanted, the Virginia Railway and Power Company, which supplies electric light and power to these communities, can furnish a service that is modern and complete in every particular.

Whatever you may desire to manufacture you will find that this territory can meet your requirements a little more completely and satisfactorily than any other section in the country.

Before deciding therefore upon the location of your plant, you should carefully and thoroughly investigate the unusual advantages for diversified manufacture in this part of Tidewater Virginia.

Knowing so thoroughly the industrial and commercial resources of the territory it serves and with a full faith in its future development along broad lines, this company wants to help bring manufacturers here, and it will be pleased to furnish those interested with such information as they may want to study the adaptability of this section for their business.

### Virginia Railway and Power Company

RICHMOND

NORFOLK

PETERSBURG

PORTSMOUTH

SUFFOLK

### VIRGINIA

- Abrasive Materials.**  
Abrasive Material Co., Philadelphia, Pa.  
Carborundum Co., Niagara Falls, N. Y.  
Norton Co., Worcester, Mass.  
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**  
Baltimore Audit Co., Baltimore, Md.  
Cruselle Audit Co., Atlanta, Ga.  
Interstate Audit Co., Washington, D. C.  
Neville, Chas., Savannah, Ga.
- Adding Machines.**  
Adder Machine Co., Wilkes-Barre, Pa.  
Burroughs Adding Machine Co., Detroit, Mich.
- Agents. (Manufacturers.)**  
Allen, Herbert F. L., Washington, D. C.
- Agricultural Implements.**  
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.  
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**  
Allen, Herbert F. L., Washington, D. C.  
American Air Compressor Wks., New York, N. Y.  
American Compressor & Pump Co., Baltimore, Md.  
Blaisdell Machinery Co., Bradford, Pa.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
General Electric Co., Schenectady, N. Y.  
Ingersoll-Rand Co., New York, N. Y.  
Union Steam Pump Co., Battle Creek, Mich.
- Air Motors.**  
Ingersoll-Rand Co., New York, N. Y.
- Aluminum Products. (Bars, Sheets, Tubes, etc.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Aluminum Wheels.**  
Norton Company, Worcester, Mass.
- Anti-Friction Metals.**  
Bailey-Lebby Co., Charleston, S. C.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.  
Phosphor-Bronze Smelting Co., Phila., Pa.  
Virginia Railway Supply Co., Norfolk, Va.
- Architects.**  
Anderson, Cain & Shepherd, Richmond, Va.  
Cotman & Cotman, Greenwood, S. C.  
Lockwood, Greene & Co., Boston, Mass.  
McLaughlin & Johnson, Lynchburg, Va.  
Milburn, Helster & Co., Washington, D. C.  
Nichols, Charles H., New York, N. Y.  
Northrup, Willard C., Winston-Salem, N. C.  
Pettit & Cave, Danville, Va.  
Shand & Lafaye, Columbia, S. C.  
Sims, J. E., Greenville, S. C.
- Architects' Supplies.**  
Keuffel & Esser, Hoboken, N. J.  
Starrett Co., L. E., Attol, Mass.  
Webster & Co., F., Philadelphia, Pa.
- Architectural Iron and Sheet Metal Work.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.
- Art Glass.**  
Blinswanger & Co., Memphis, Tenn.
- Art Glass and Prisms. (Set in Zinc and Copper.)**  
Spies Art Glass Co., G. A., St. Louis, Mo.
- Asbestos.**  
Carolina Portland Cement Co., Charleston, S. C.  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Pipe Covering Co., Inc., Richmond, Va.
- Asphalt.**  
Armstrong Mfg. Co., Richmond, Va.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
Texas Co., The, New York, N. Y.
- Asphalt Melters.**  
Stuebner, Iron Works, G. L., Long Island City, New York, N. Y.
- Asphalt Roofing and Siding. (Bird Sand and Clipped Slate Surface.)**  
Birmingham & Seaman Co., Chicago, Ill.
- Automatic Buckets.**  
Browning Engineering Co., Cleveland, O.
- Automobiles. (Pleasure.)**  
Interstate Automobile Co., Muncie, Ind.
- Automobiles. (Motor Trucks.)**  
Schacht Motor Car Co., Cincinnati, O.
- Axles. (See Car Wheels, Axles and Trucks.)**
- Babbitt Metal. (See Anti-Friction Metal.)**
- Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)**  
American Railway Supply Co., New York, N. Y.
- Bakers' Machinery.**  
Lynn Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**  
Baltimore Trust Co., Baltimore, Md.  
Barr, J. H. C., Philadelphia, Pa.  
Delaware Trust Co., Wilmington, Del.  
Electric Bond & Share Co., New York, N. Y.  
Glenn, W. S., Spartanburg, S. C.  
Guaranty State Bank & Trust Co., Dallas, Tex.  
Halsey & Co., N. W., New York, N. Y.  
Lisman & Co., F. J., New York, N. Y.  
Mercantile Trust & Deposit Co., Baltimore, Md.  
New First National Bank, Columbus, O.  
New York Bond & Share Co., New York, N. Y.  
Nuveen & Co., John, Chicago, Ill.  
Savannah Bank & Trust Co., Savannah, Ga.  
Southern States Development Co., New York, N. Y.  
Violet & Co., Atwood, New York, N. Y.
- Banks.**  
First National Bank, Baltimore, Md.  
First Nat'l Bank of Key West, Key West, Fla.  
First National Bank, Richmond, Va.  
Guaranty State Bank & Trust Co., Dallas, Tex.  
Merchants National Bank, Baltimore, Md.  
New First National Bank, Columbus, O.  
National Exchange Bank, Baltimore, Md.  
Savannah Bank & Trust Co., Savannah, Ga.
- Bank and Office Railings and Grilles. (Iron.)**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Buckeye Wire & Iron Works Co., Columbus, O.  
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire Works, Louisville, Ky.  
Duffer & Co., Baltimore, Md.  
Duffer, Baggott & Co., Baltimore, Md.  
Jones & Co., L. E., Baltimore, Md.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.
- Bank Fixtures.**  
Buse & Thompson, Baltimore, Md.
- Bar Iron. (Red and Galvanized.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Nietown Plate Washer Co., Philadelphia, Pa.
- Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)**  
American Steel & Wire Co., Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Concrete-Steel Co., The, New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Wight & Co., W. N., New York, N. Y.
- Bearings. (Ball.)**  
Bretz Co., J. S., New York, N. Y.  
Hyatt Roller Bearing Co., Newark, N. J.  
Standard Roller Bearing Co., Philadelphia, Pa.
- Bearings. (Brass Journal.)**  
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.
- Bearings. (Locomotive and Car.)**  
Keystone Bronze Co., Pittsburgh, Pa.
- Bearings. (Oilless.)**  
North Amer. Metaline Co., Long Island City, N. Y.
- Bearings. (Roller.)**  
Hyatt Roller Bearing Co., Newark, N. J.  
Standard Roller Bearing Co., Philadelphia, Pa.
- Bells. (Call.)**  
Holtzer-Cabot Electric Co., Boston, Mass.
- Bells and Gongs.**  
National Tube Co., Pittsburgh, Pa.  
Western Electric Co., New York, N. Y.
- Belting. (Leather, Canvas, Rubber.)**  
American Supply Co., Providence, R. I.  
Bailey-Lebby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Belting Co., Baltimore, Md.  
Diamond Rubber Co., Akron, O.  
Druid Oak Belting Co., Inc., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.  
Ladew, Estate Edward, Glen Cove, N. Y.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
Rosendale-Reddaway B. & H. Co., Newark, N. J.  
Ward-Becke Co., Washington, D. C.  
Williams & Sons, I. B., Dover, N. H.
- Belting. (Chain.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Newtown (Philadelphia), Pa.  
Morse Chain Co., Ithaca, N. Y.
- Belt Conveyors.**  
Jeffrey Mfg. Co., Columbus, O.  
Robins Conveying Belt Co., New York, N. Y.
- Belt Dressing.**  
Diamond Rubber Co., Akron, O.  
Gandy Belting Co., Baltimore, Md.  
Ladew, Estate Edward, Glen Cove, N. Y.
- Belt Fasteners.**  
Crescent Belt Fastener Co., New York, N. Y.
- Belt Lacing. (See Belting, Leather, Canvas, Rubber, and Supplies.)**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**  
Church & Dwight Co., New York, N. Y.
- Billets. (Open Hearth.)**  
Erie Forge Co., Erie, Pa.
- Blackboards. (Slate.)**  
East Bangor Co., Slate Co., The, East Bangor, Pa.  
Hower, J. K., Slatington, Pa.  
Johnson, E. J., New York, N. Y.
- Block Tackle. (For Wire or Manila Rope.)**  
Patterson Co., W. W., Pittsburgh, Pa.
- Blowers and Exhaust Fans.**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
Clark Co., Geo. F., Windsor Locks, Conn.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economizer Co., Schenectady, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Savannah Blow Pipe Co., Savannah, Ga.  
Standard Blower & Metal Mfg. Co., Atlanta, Ga.  
Sturtevant Co., B. F., Hyde Park, Mass.
- Blueprint Apparatus.**  
Keuffel & Esser, Hoboken, N. J.
- Boilers.**  
Abendroth & Root Mfg. Co., Newburgh, N. Y.  
Ames Iron Works, Oswego, N. Y.  
Babcock & Wilcox Co., New York, N. Y.  
Brownell Co., Dayton, O.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago House Wrecking Co., Chicago, Ill.  
Cole Mfg. Co., E. D., Newburg, Ga.  
Cooper Co., C. & G., Mt. Vernon, O.  
Gem City Boiler Co., Dayton, O.  
Gibbs Machinery Co., Columbia, S. C.  
Hartley Boiler Works, Montgomery, Ala.  
Heine Safety Boiler Co., St. Louis, Mo.  
Keeler Co., E., Wilmington, Pa.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Lombard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Oil City Boiler Co., Oil City, Pa.  
Petroleum Iron Works Co., Sharon, Pa.  
Phoenix Iron Works Co., Meadville, Pa.  
Price Machinery Co., S. M., Norfolk, Va.  
Ruemml-Dawley Mfg. Co., St. Louis, Mo.  
Schofield & Sons Co., J. S., Macon, Ga.  
Smith-Courtney Co., Richmond, Va.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Union Iron Works Co., Selma, Ala.  
Valh & Murdoch Iron Works, Charleston, S. C.  
Vogt Machine Co., Henry, Louisville, Ky.  
Walsh & Weldner Boiler Co., Chattanooga, Tenn.
- Boiler Setting.**  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Boiler Tubes. (See Tubes, Boiler.)**
- Bolts, Nuts, Rivets, Studs and Washers.**  
Milton Mfg. Co., Milton, Pa.  
Nietown Plate Washer Co., Philadelphia, Pa.  
Oliver Iron & Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.
- Bonds. (Surety, etc.)**  
Fidelity & Deposit Co., Baltimore, Md.
- Boring. (Cylinder.)**  
Strickland Machine Co., Richmond, Va.
- Bottling Outfits.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Box Shooks.**  
Naylor & Co., S. E., Gulfport, Miss.
- Brass Goods.**  
Bailey-Lebby Co., Charleston, S. C.  
Buckeye Iron & Brass Works, Dayton, O.  
Powell Co., Wm., Cincinnati, O.
- Brazings. (Cast Iron.)**  
Richmond Machine Works, Inc., Richmond, Va.  
Strickland Machine Co., Richmond, Va.
- Brass Railings and Grilles, etc.**  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Brewers' Machinery.**  
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Building.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.  
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.  
Carolina Portland Cement Co., Charleston, S. C.  
Flake & Co., Inc., New York, N. Y.  
Hood, B. Midlin, Atlanta, Ga.  
Hydraulic Press Brick Co., St. Louis, Mo.  
Oconee Brick & Tile Co., Milledgeville, Ga.  
Pittsburgh-Buttala Co., Pittsburgh, Pa.  
Sibley-Menge Brick & Coal Co., Birmingham, Ala.
- Brick. (Blast Furnace, Coke Oven.)**  
Ashland Fire Brick Co., Ashland, Ky.  
Hood, B. Midlin, Atlanta, Ga.
- Brick. (Enamelled.)**  
Amer. Enam. Brick & Tile Co., New York, N. Y.
- Brick. (Fire Clay.)**  
Ashland Fire Brick Co., Ashland, Ky.  
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.  
Flake & Co., Inc., New York, N. Y.  
Harbison-Walker Refractories Co., Pittsburgh, Pa.  
Kilian Fire Brick Works, Killian, S. C.  
New Jersey Fire Brick Works, Highland Park, Ky.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens' Sons Co., H., Macon, Ga.  
Taylor Sons Co., Chas., Cincinnati, O.  
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingalls Shale Brick Co., Birmingham, Ala.
- Brick. (Silica.)**  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**  
Carnell, George, Philadelphia, Pa.  
Fernholtz Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Gallon, O.  
Gibbs Machinery Co., Columbia, S. C.  
Scott-Madden Iron Works, Keokuk, Iowa.  
Steele & Sons, J. C., Statesville, N. C.  
Taplin-Rice-Clerkin Co., Akron, O.
- Brick Fireplaces. (See Fireplaces, Artistic Brick.)**
- Brick Machinery. (Sand Lime.) (See Sand-Lime Brick Machinery.)**
- Brickwork. (Artistic.)**  
Flake & Co., Inc., New York, N. Y.
- Bridges. (Concrete.)**  
Concrete Steel Engineering Co., New York, N. Y.  
Roanoke Bridge Co., Roanoke, Va.
- Bridges. (Rolling Lift.)**  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges.**  
American Bridge Co. of New York, New York, N. Y.  
Belmont Iron Works, Inc., Philadelphia, Pa.  
Chicago Bridge & Iron Wks., Chicago, Ill.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Farris Bridge Co., Pittsburgh, Pa.  
Missouri Val. Bridge & Iron Co., Leavenworth, Kan.  
Roanoke Bridge Co., Roanoke, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.  
York Bridge Co., York, Pa.
- Bridge and Structural Iron Paints.**  
Carolina Portland Cement Co., Charleston, S. C.  
Chattanooga Paint Co., Chattanooga, Tenn.  
Detroit Graphite Co., Detroit, Mich.  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
Standard Paint Co., New York, N. Y.
- Brimstone.**  
Union Sulphur Co., New York, N. Y.
- Briquetting Machinery. (Coal, Lignite, Ore.)**  
Devillers, Robert, Brooklyn, N. Y.
- Buckets. (Excavators.)**  
Browning Mfg. Co., Mansfield, O.  
Hayward Co., New York, N. Y.  
Moulinhan Mch. Co., Chicago, Ill.  
Owen Bucket Co., Cleveland, O.  
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.  
Williams Co., The G. H., Cleveland, O.
- Buckets. (Ore, etc.)**  
Brown Hoisting Mch. Co., Cleveland, O.  
Browning Mfg. Co., Mansfield, O.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Newtown (Philadelphia), Pa.  
Owen Bucket Co., Cleveland, O.  
Smith Co., T. L., Atlanta, Ga.  
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**  
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**  
Falls City Construction Co., Louisville, Ky.  
Farris Bridge Co., Pittsburgh, Pa.  
Ferro Concrete Construction Co., Cincinnati, O.  
Lisle-Dunning Const. Co., Oklahoma City, Okla.  
Selden-Breck Construction Co., St. Louis, Mo.  
White & Co., J. G., New York, N. Y.
- Buildings. (Financed and Erected.)**  
Falls City Construction Co., Louisville, Ky.  
Gulf Coast Construction Co., Houston, Tex.  
Lisle-Dunning Const. Co., Oklahoma City, Okla.
- Building Supplies.**  
Armstrong Mfg. Co., Richmond, Va.  
Carolina Portland Cement Co., Charleston, S. C.  
Chicago House Wrecking Co., Chicago, Ill.  
Southeastern Lime & Cement Co., Charleston, S. C.  
Southern Building Material Co., Norfolk, Va.
- Burlap—Inserted Roofing and Siding. (Flexible Cement.)**  
Birmingham & Seaman Co., Chicago, Ill.
- Burners. (Oil.) (See Fuel Oil Equipments.)**
- Bushings. (Oilless, for Loose Pulleys.)**  
North Amer. Metaline Co., Long Island City, N. Y.
- Cables.**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebeling's Sons Co., John A., Trenton, N. J.  
Williamsport Wire Rope Co., Williamsport, Pa.
- Cableways. (Overhead Suspension.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Flory Mfg. Co., E., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Mead-Morrison Mfg. Co., Cambridgeport, Mass.  
Roebeling's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**  
Bliss Co., E. W., Brooklyn, N. Y.
- Cans.**  
New Orleans Rfg. & Metal Wks., New Orleans, La.  
Southern Can Co., Baltimore, Md.
- Canning Machinery and Supplies.**  
Robins & Co., A. K., Baltimore, Md.  
Sincclair-Scott Co., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**  
Carborundum Co., Niagara Falls, N. Y.
- Card Clothing.**  
American Supply Co., Providence, R. I.
- Cars. (Dump, Industrial Logging and Mine.)**  
Austin Mfg. Co., Chicago, Ill.  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., West New Brighton, N. Y.  
Hales Co., The, Cincinnati, O.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Raleigh Iron Works Co., Raleigh, N. C.  
Smith Co., T. L., Atlanta, Ga.  
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.  
Union Iron Works, Selma, Ala.
- Cars. (Passenger and Freight.) (See Railroad Equipment and Supplies.)**
- Car Couplers and Knuckles.**  
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Lighting and Heating.**  
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Steps. (Extension.)**  
Blake Car Step Works, Charlotte, N. C.
- Car Wheels, Axles and Trucks.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Union Iron Works, Selma, Ala.
- Casters.**  
Clark Co., Geo. F., Windsor Locks, Conn.
- Castings. (Aluminum.)**  
Aluminum Company of America, Pittsburgh, Pa.  
Norwalk Brass Co., Norwalk, Conn.
- Castings. (Brass and Bronze.)**  
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.  
Keystone Bronze Co., Pittsburgh, Pa.  
Norwalk Brass Co., Norwalk, Conn.  
Phosphor-Bronze Smelting Co., Phila., Pa.  
Richmond Machine Works, Inc., Richmond, Va.  
Stratton & Bragg Co., Petersburg, Va.  
Triumph Electric Co., Cincinnati, Ohio.
- Castings. (Iron, Gray, etc.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Gibbs Machinery Co., Columbia, S. C.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Glaucorran Pipe & Foundry Co., Lynchburg, Va.  
McWane Pipe Works, Lynchburg, Va.  
Poole Engineering & Machine Co., Baltimore, Md.  
Roanoke Iron Works, Inc., Roanoke, Va.  
Robins Conveying Belt Co., New York, N. Y.  
Ross-Meehan Foundry Co., Chattanooga, Tenn.  
Stratton & Bragg Co., Petersburg, Va.  
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.  
Valh & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**  
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Refraux Steel Casting Co., Pittsburgh, Pa.
- Ceilings. (Metal.)**  
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.  
Edwards Manufacturing Co., Cincinnati, O.  
Harry Steel Co., O. K., St. Louis, Mo.  
Keighley Metal Cell. & Mfg. Co., S. Pittsburgh, Pa.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Cement.**  
Alpha Portland Cement Co., Easton, Pa.  
American Cement Co., Philadelphia, Pa.  
Carolina Portland Cement Co., Charleston, S. C.  
Cincinnati Portland Cement Corp., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartman Portland Cement Co., Wm. G., Philadelphia, Pa.  
Iron Portland Cement Co., Ironport, O.  
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Security Cement & Lime Co., Baltimore, Md.  
Southern States Portland Cement Co., Rockmart, Ga.  
Standard Portland Cement Co., Leeds, Ala.  
Tidewater Portland Cement Co., Baltimore, Md.
- Cement. (Liquids.)**  
Glidden Varnish Co., Cleveland, O.
- Cement Machinery.**  
Arling Engineering Co., J. R., New York, N. Y.  
Clyde & Mining Machinery Co., Oudaby, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Centers. (Collapsible Steel.)**  
Blair Col. Steel Centering Co., Pittsburgh, Pa.
- Chain Blocks.**  
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
- Chains. (Dredge, Quarry, Steam Shovel.)**  
Welmer Chain & Iron Co., Lebanon, Pa.
- Channellers.**  
Ingersoll-Rand Co., New York, N. Y.
- Checks, Metal. (Factory, Time and Merchandise.)**  
American Railway Supply Co., New York, N. Y.
- Chemical and Drug Machinery.**  
Campbell, F. F., Philadelphia, Pa.
- Chemists.**  
Burn, Harry, Birmingham, Ala.  
Davis, Geo. C., Philadelphia, Pa.  
Froehling & Robertson, Richmond, Va.  
McKenna, Dr. Chas. F., New York, N. Y.
- Chimneys. (Steel-Concrete.)**  
Specialty Eng. Co., Houston, Tex.  
Weber Chimney Co., Chicago, Ill.
- Chloride Accumulator.**  
Electric Storage Battery Co., The, Phila., Pa.
- Chucks.**  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns (Commercial and Industrial Opportunities.) (See Industrial, Agricultural and Commercial Opportunities.)**
- Clayworking Machinery. (See Brick and Clayworking Machinery and Supplies.)**
- Cleaning Compound. (Floors, etc.)**  
India Alkali Works, Boston, Mass.
- Clocks. (Electro-Self-Winding.)**  
Electro-Clock Co., Baltimore, Md.
- Clocks. (Time Recorders.)**  
Kaiser, Louis E., Baltimore, Md.
- Clocks. (Watchman.)**  
Holtzer-Cabot Electric Co., Boston, Mass.  
Kaiser, Louis E., Baltimore, Md.
- Clutches.**  
Dodge Manufacturing Co., Mishawaka, Ind.  
Positive Clutch & Pulley Works, Buffalo, N. Y.
- Coal.**  
Alabama Coal & Iron Co., Birmingham, Ala.  
Cincinnati Coal Corp., Spartanburg, S. C.  
Cincinnati Fuel Co., Spartanburg, S. C.  
Consolidated Coal Co., Inc., New York, N. Y.  
Flat Top Fuel Co., Bluefield, W. Va.  
Pittsburgh-Buttala Co., Pittsburgh, Pa.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
- Coal Briquetting Machinery.**  
Devillers, Robert, Brooklyn, N. Y.



**Coal Cutters.**  
Ingersoll-Rand Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.

**Coal Handling Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Brown Hoisting Mch. Co., Cleveland, O.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., West New Brighton, N. Y.  
Link-Belt Co., Cincinnati, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Mead-Morrison Mfg. Co., Cambridgeport, Mass.  
Robins Conveying Belt Co., New York, N. Y.  
Williams Co., The G. H., Cleveland, O.

**Coal Tar and By-Products.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Carolina Portland Cement Co., Charleston, S. C.

**Coke.**  
Alabama Coal & Iron Co., Birmingham, Ala.  
Flat Top Fuel Co., Bluefield, W. Va.  
Pittsburgh Co., Pittsburgh, Pa.  
Reger, Brown & Co., Cincinnati, O.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.

**Collapsible Steel Forms. (For Concrete Work.)**  
Blaw Col. Steel Centering Co., Pittsburgh, Pa.

**Concrete Construction. (Steel Reinforcement.)**  
American Steel & Wire Co., Chicago, Ill.  
Brown Hoisting Machinery Co., Cleveland, O.  
Concrete-Steel Co., The, New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Ferro Concrete Construction Co., Cincinnati, O.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Jeffrey Mfg. Co., Columbus, O.  
Reichert Mfg. Co., Milwaukee, Wis.  
Specialty Eng. Co., Houston, Tex.  
Wight & Co., W. N., New York, N. Y.

**Concrete Curb Protection. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.

**Concrete Dams.**  
Ambrose Hydraulic Const. Co., Boston, Mass.  
Hydraulic Properties Co., New York, N. Y.

**Concrete Floor Dressing. (Waterproof.)**  
Gibson Varsh Co., Cleveland, O.

**Concrete Forms. (Metal.)**  
Blaw Col. Steel Centering Co., Pittsburgh, Pa.  
Reichert Mfg. Co., Milwaukee, Wis.

**Concrete Forms. (Steel Collapsible.)**  
Blaw Col. Steel Centering Co., Pittsburgh, Pa.

**Concrete Mixers.**  
Carolina Portland Cement Co., Charleston, S. C.  
Jeffrey Mfg. Co., Columbus, O.  
Mead-Morrison Mfg. Co., Chicago, Ill.  
Milwaukee Concrete Mixer & Mch. Co., Milwaukee, Wis.  
Smith Co., T. L., Atlanta, Ga.  
Standard Scale & Supply Co., Pittsburgh, Pa.  
Waterloo Cement Mch. Co., Waterloo, Iowa.

**Concrete Pile. (Corrugated.)**  
The Underground Const. Co., St. Louis, Mo.

**Concrete Reinforcing Bars.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Concrete-Steel Co., The, New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.

**Concrete Ties.**  
Universal Concrete Tie Co., New Orleans, La.

**Condensers.**  
Alberger Condenser Co., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Westinghouse Machine Co., Pittsburgh, Pa.  
Wheeler Condenser & Eng. Co., New York, N. Y.  
York Mfg. Co., York, Pa.

**Conductor Pipe.**  
Edwards Mfg. Co., Cincinnati, O.  
Hunt & Co., C. G., Pittsburgh, Pa.  
Milwaukee Corrugating Co., Milwaukee, Wis.

**Contractors. (Hydro-Electric Developments.)**  
Multiple Arch Hyd. Const. Co., Ltd., Spartanburg, S. C.

**Contractors' Machinery and Supplies. (See also Hoisting Machinery.)**  
American Hoist & Derrick Co., St. Paul, Minn.  
American Locomotive Co., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Case Threshing Mch. Co., J. I., Racine, Wis.  
Clyde Iron Works, Duluth, Minn.  
Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.  
Exeter Machine Works, Pittsburg, Pa.  
Flory Mfg. Co., S., Bangor, Pa.  
Hyde Bros. & Co., New York, N. Y.  
Ingersoll-Rand Co., New York, N. Y.  
Linton, W. J., New York, N. Y.  
Males Co., The, Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Maryland Equipment & Supply Co., Baltimore, Md.  
Mead-Morrison Mfg. Co., Cambridgeport, Mass.  
Monaghan Mch. Co., Chicago, Ill.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Owen Bucket Co., Cleveland, O.  
Pickett Co., Inc., H. W., Philadelphia, Pa.  
Pike & Contr. Co., Supply Co., New York, N. Y.  
Robins Conveying Belt Co., New York, N. Y.  
Smith Co., T. L., Atlanta, Ga.  
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.  
Williamson Bros. Co., Philadelphia, Pa.

**Conveying Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Brown Hoisting Mch. Co., Cleveland, O.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Dodge Manufacturing Co., Milwaukee, Ind.  
Flory Mfg. Co., S., Bangor, Pa.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., West New Brighton, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Mead-Morrison Mfg. Co., Cambridgeport, Mass.  
McLanahan-Stone Mch. Co., Hollidaysburg, Pa.  
Robins Conveying Belt Co., New York, N. Y.

**Cooling Towers.**  
Alberger Condenser Co., New York, N. Y.  
Wheeler Condenser & Eng. Co., New York, N. Y.

**Cordage.**  
American Mfg. Co., New York, N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Turner Co., J. Spencer, New York, N. Y.  
Whitlock Cordage Co., New York, N. Y.

**Cordage Machinery.**  
Baskell-Dawes Machine Co., Boston, Mass.

**Corn-Mill Machinery.**  
Bordy & Marmon Co., Indianapolis, Ind.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

**Cotton Duck.**  
Turner Co., J. Spencer, New York, N. Y.

**Cotton Oil and Products.**  
American Cotton Oil Co., New York, N. Y.

**Cotton Yarns. (Commission Merchants.)**  
Paulson, Linkmou & Co., New York, N. Y.

**Cotton-Gin Machinery.**  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Gibbs Machinery Co., Columbia, S. C.  
Van Winkle Gin & Machine Co., Atlanta, Ga.

**Cotton-Mill Machinery.**  
American Mach. & Mfg. Co., Charlotte, N. C.  
American Supply Co., Providence, R. I.  
Draper Co., Hopedale, Mass.  
Kilson Machine Shop, Lowell, Mass.  
Lowell Machine Shop, Lowell, Mass.  
Mason Machine Works, Taunton, Mass.  
Saco-Petee Co., Newton Upper Falls, Mass.  
Whitins Machine Works, Whitinsville, Mass.  
Whitinsville Sp'g'g Ring Co., Whitinsville, Mass.

**Cotton-Mill Supplies.**  
American Supply Co., Providence, R. I.  
Whitinsville Sp'g'g Ring Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**  
Buckeye Iron & Brass Works, Dayton, O.  
Burruss Engineering Co., Atlanta, Ga.  
Callahan Co., W. F., The, Dayton, O.  
Cardwell Machine Co., Richmond, Va.  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Van Winkle Gin & Machine Co., Atlanta, Ga.

**Couplings.**  
American Spiral Pipe Works, Chicago, Ill.  
Brown Co., A. & F., New York, N. Y.  
Caldwell & Son Co., H. W., Louisville, Ky.  
Dodge Manufacturing Co., Milwaukee, Ind.  
Glen's Foundry & Machine Co., Columbus, Ga.  
Sinclair-Scott Co., Baltimore, Md.  
Wood's Sons, T. B., Chambersburg, Pa.

**Couplings. (Car.)**  
Welmer Chain & Iron Co., Lebanon, Pa.

**Couplings. (Hose, Air, Gas, Steam and Water.)**  
National Tube Co., Pittsburgh, Pa.

**Covering. (Pipe, Boiler, etc.)**  
Carolina Portland Cement Co., Charleston, S. C.  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Pipe Covering Co., Inc., Richmond, Va.

**Cranes. (Locomotive.)**  
American Hoist & Derrick Co., St. Paul, Minn.  
Brown Hoisting Machinery Co., Cleveland, O.  
Browning Engineering Co., Cleveland, O.  
Exeter Machine Works, Pittsburg, Pa.  
Ohio Locomotive Crane Co., Bucyrus, Ohio.

**Cranes. (Traveling, Hand, Power, Hydraulic.)**  
Brown Hoisting Machinery Co., Cleveland, O.  
Hayward Co., New York, N. Y.  
Lane Mfg. Co., Montpelier, Vt.  
Northern Engineering Works, Detroit, Mich.  
Spindel, J. G., Reading, Pa.

**Crayons.**  
Lowell Crayon Co., Lowell, Mass.

**Crematories. (Garbage.)**  
Specialty Eng. Co., Houston, Tex.

**Creosote.**  
Carolina Portland Cement Co., Charleston, S. C.

**Creosote Oil.**  
Atlantic Turpentine & Ref'n'g Co., Savannah, Ga.

**Creosoted Wood Block. (Contractors for Laying.)**  
Creosoted Wood Block Pav. Co., New Orleans, La.

**Creosoting Works.**  
Gulfport Creosoting Co., Gulfport, Miss.  
International Creosot'g & Cons. Co., Galveston, Tex.  
National Lumber & Creos. Co., Texarkana, Ark.  
Southern Creosoting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossarms and Pins.**  
Carolina Electrical Co., Raleigh, N. C.  
International Creosot'g & Cons. Co., Galveston, Tex.  
Southern Creosoting Co., Ltd., Slidell, La.  
Western Electric Co., New York, N. Y.

**Crossings. (See Railroad Frogs and Switches.)**

**Crossie Machine.**  
Standard Cross Tie Mch. Co., New Orleans, La.

**Crossies.**  
International Creosot'g & Cons. Co., Galveston, Tex.  
National Lumber & Creos. Co., Texarkana, Ark.  
Naylor & Co., S. E., Gulfport, Miss.  
Southern Creosoting Co., Ltd., Slidell, La.  
Universal Concrete Tie Co., New Orleans, La.

**Crossies. (Reinforced Concrete.)**  
Universal Concrete Tie Co., New Orleans, La.

**Crossies. (Steel.)**  
Carnegie Steel Co., Pittsburgh, Pa.

**Crushers. (Corn and Cob.)**  
Gardner Crusher Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.

**Crushers. (Rock.)**  
Austin Mfg. Co., Chicago, Ill.  
Case Threshing Mch. Co., J. I., Racine, Wis.  
Crescon Co., Geo. V., Philadelphia, Pa.  
Gardner Crusher Co., New York, N. Y.  
Lehigh Crusher Co., Ltd., Catasauqua, Pa.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
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Waterloo Cement Mch. Co., Waterloo, Iowa.

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Lide, Martin J., Birmingham, Ala.  
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 Gulf Refining Co., Pittsburgh, Pa.  
 Texas Co., The, New York, N. Y.  
**Fuel Oil Equipment.**  
 Petroleum Iron Works Co., Sharon, Pa.  
**Fuses, Bases and Fittings.**  
 Johns-Manville Co., H. W., New York, N. Y.  
**Galvanized Steel and Iron.**  
 American Sheet & Tin Plate Co., Pittsburgh, Pa.  
 J. C. H. Galvanizing Co., Philadelphia, Pa.  
 La Belle Iron Works, Steubenville, O.  
 McCalla, Harold, Philadelphia, Pa.  
 New Orleans Roof & Metal Co., New Orleans, La.  
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
 Youngstown Sheet & Tube Co., Youngstown, O.
- Garages. (Fireproof and Portable.)**  
 Harry Steel Co., O. K., St. Louis, Mo.  
**Gas Blowers. (Turbine.)**  
 Terry Steam Turbine Co., New York, N. Y.  
**Gas Compressors.**  
 Blaisdell Machinery Co., Bradford, Pa.  
 Ingersoll-Rand Co., New York, N. Y.  
**Gas Engines. [See Engines, Gas.]**  
**Gas Holders.**  
 Chicago Bridge & Iron Wks., Chicago, Ill.  
**Gas Plants.**  
 Western Gas Construction Co., Ft. Wayne, Ind.  
**Gas Plants and Benches.**  
 Improved Equipment Co., New York, N. Y.  
**Gas Producers.**  
 Bogart Gas Power Eng. Co., Buffalo, N. Y.  
 Improved Equipment Co., New York, N. Y.  
 Otto Gas Engine Works, Philadelphia, Pa.  
 Standard Gas Power Co., Atlanta, Ga.  
 Westinghouse Machine Co., Pittsburgh, Pa.  
 Wood & Co., B. D., Philadelphia, Pa.  
**Gasoline and Kerosene.**  
 Gulf Refining Co., Pittsburgh, Pa.  
 Texas Co., The, New York, N. Y.  
**Gas and Steam Fitters' Tools.**  
 Saunders' Sons, D., Yonkers, N. Y.  
**Gaskets. (Rubber.)**  
 N. J. Car Spring & Rubber Co., Jersey City, N. J.  
**Gears.**  
 Albro-Clen Elevator Co., Philadelphia, Pa.  
 Brown Co., A. & F., New York, N. Y.  
 Caldwell & Son Co., Inc., W. E., Louisville, Ky.  
 Cresson Co., Geo. V., Philadelphia, Pa.  
 Dayton Globe Iron Works Co., Dayton, O.  
 Dodge Manufacturing Co., Mishawaka, Ind.  
 Earle Gear & Machine Co., The, Philadelphia, Pa.  
 Jeffrey Mfg. Co., Columbus, O.  
 Poole Engineering & Machine Co., Baltimore, Md.  
 Positive Clutch & Pulley Works, Buffalo, N. Y.  
 Trump Mfg. Co., Springfield, O.  
**Geologists.**  
 Bureau of Assoc. Geological Engineers, Boston, Mass.  
 Froehling & Robertson, Richmond, Va.  
**Glass. (Plate, etc.)**  
 Binwanger & Co., Memphis, Tenn.  
 Holophane Co., Newark, Ohio.  
**Governors.**  
 Pickering Governor Co., Portland, Conn.  
**Grain Elevator Supplies.**  
 Caldwell & Sons Co., H. W., Chicago, Ill.  
 Dodge Manufacturing Co., Mishawaka, Ind.  
 Jeffrey Mfg. Co., Columbus, O.  
 Link-Belt Co., Nictown (Philadelphia), Pa.  
**Granite.**  
 Harris Granite Quarries Co., Salisbury, N. O.  
**Graphite.**  
 Detroit Graphite Co., Detroit, Mich.  
 Dixon Crucible Co., Joseph, Jersey City, N. J.  
**Grates and Grate Bars.**  
 Thomas Grate Bar Co., Birmingham, Ala.  
**Gravel.**  
 Arndel Sand & Gravel Co., Baltimore, Md.  
 Lathrop & Co., C. P., Richmond, Va.  
**Grease.**  
 Albany Lubricating Co., New York, N. Y.  
**Grease Cups.**  
 Albany Lubricating Co., New York, N. Y.  
**Greases and Lubricating Compounds.**  
 Galens Signal Oil Co., Franklin, Pa.  
 Robinson & Son Co., Wm. C., Baltimore, Md.  
 Texas Co., The, New York, N. Y.  
**Grinders. (Gypsum, Limestone, etc.)**  
 Gardner Crusher Co., New York, N. Y.  
 Williams Pat. Crusher & Pulv. Co., Chicago, Ill.  
**Grinding Wheels.**  
 Abrasive Material Co., Philadelphia, Pa.  
 Carborundum Co., Niagara Falls, N. Y.  
 Norton Co., Worcester, Mass.  
 Vittrified Wheel Co., Westfield, Mass.  
**Groovers.**  
 Huther Bros. Saw Mfg. Co., Rochester, N. Y.  
**Gunpowder.**  
 de Pont-de Nemours Powder Co., E. I., Wilmington, Del.  
**Hammers. (Steam, Power, Pneumatic.)**  
 Chicago Pneumatic Tool Co., Chicago, Ill.  
 Independent Pneumatic Tool Co., Chicago, Ill.  
 Ingersoll-Rand Co., New York, N. Y.  
**Hand Elevators.**  
 McKenna Bros. Brass Co., Pittsburgh, Pa.  
 Sidney Elevator Mfg. Co., Sidney, O.  
**Handle Machinery. [See Woodworking Machy.]**  
**Hangers. [See Pulleys, Shafting and Hangers.]**  
**Hardwood Doors and Trim.**  
 Massee & Felton Lumber Co., Macon, Ga.  
**Hauling Engines. (Steam Traction.)**  
 Case Threshing Mach. Co., J. I., Racine, Wis.  
**Hay Tools.**  
 Myers & Bro., F. B., Ashland, O.  
**Heater. (Portable, for Bituminous Pavements.)**  
 Ruggles-Coles Engineering Co., New York, N. Y.  
**Heating Apparatus, Engineers and Contractors.**  
 American Blower Co., Detroit, Mich.  
 Buffalo Forge Co., Buffalo, N. Y.  
 Monitor Steam Generator Mfg. Co., Balto., Md.  
 Peck-Hammond Co., The, Cincinnati, O.  
 Sturtevant Co., B. F., Hyde Park, Mass.  
**Hoisting Machinery.**  
 American Hoist & Derrick Co., St. Paul, Minn.  
 Brown Hoisting Mch. Co., Cleveland, O.  
 Byers Machine Co., John F., Ravenna, O.  
 Clyde Iron Works, Duluth, Minn.  
 Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.  
 Exeter Machine Works, Pittston, Pa.  
 Flory Mfg. Co., S., Bangor, Pa.  
 Hayward Co., New York, N. Y.  
 Link-Belt Co., Nictown (Philadelphia), Pa.  
 Lidgerwood Mfg. Co., New York, N. Y.  
 Males Co., Cincinnati, O.  
 Mead-Morrison Mfg. Co., Cambridgeport, Mass.  
 Monaghan Machine Co., Chicago, Ill.  
 National Hoisting Engine Co., Harrison, N. J.  
 Smith Co., T. L., Atlanta, Ga.  
 Stroudsburg Engine Works, Stroudsburg, Pa.  
 Williams Bros. Co., Philadelphia, Pa.
- Holists.**  
**CHAIN.**  
 Ford Chain Block & Mfg. Co., Philadelphia, Pa.  
 Speidel, J. G., Reading, Pa.  
**ELECTRIC.**  
 American Hoist & Derrick Co., St. Paul, Minn.  
 Lidgerwood Mfg. Co., New York, N. Y.  
 Monaghan Mch. Co., Chicago, Ill.  
 Northern Engineering Works, Detroit, Mich.  
 Patten Mfg. Co., Chattanooga, Tenn.  
**PNEUMATIC MOTORS.**  
 Chicago Pneumatic Tool Co., Chicago, Ill.  
 Ingersoll-Rand Co., New York, N. Y.  
**Hoops, Bands, etc. (Galvanized.)**  
 J. C. H. Galvanizing Co., Philadelphia, Pa.  
 McCalla, Harold, Philadelphia, Pa.  
**Hoops. (Barrel.)**  
 American Steel & Wire Co., Chicago, Ill.  
 Carnegie Steel Co., Pittsburgh, Pa.  
**Hose.**  
 Eureka Fire Hose Mfg. Co., New York, N. Y.  
 N. J. Car Spring & Rubber Co., Jersey City, N. J.  
**Hotels.**  
 Great Southern Hotel, Gulfport, Miss.  
 Hotel Essex, Boston, Mass.  
**Hot Water Service Heaters.**  
 Alberger Pump Co., New York, N. Y.  
**Hydrants.**  
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
 Columbian Iron Works, Chattanooga, Tenn.  
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
 Goulds Mfg. Co., Seneca Falls, N. Y.  
 Myers & Bro., F. B., Ashland, O.  
 Wood & Co., B. D., Philadelphia, Pa.  
**Hydraulic Cylinders.**  
 American Spiral Pipe Works, Chicago, Ill.  
**Hydraulic Rams.**  
 Goulds Mfg. Co., Seneca Falls, N. Y.  
 Rife Engine Co., New York, N. Y.  
**Icemaking Machinery and Supplies.**  
 Columbus Iron Works Co., Columbus, Ga.  
 Creamery Package Mfg. Co., Chicago, Ill.  
 Frick Co., The, Waynesboro, Pa.  
 Haguer, John, St. Louis, Mo.  
 Remington Machine Co., Wilmington, Del.  
 Tait-Nordmeyer Eng. Co., St. Louis, Mo.  
 Vilter Mfg. Co., Milwaukee, Wis.  
 Vogt Machine Co., Henry, Louisville, Ky.  
 York Mfg. Co., York, Pa.  
**Incorporators. (Companies.)**  
 Delaware Trust Co., Wilmington, Del.  
**Industrial, Agricultural and Commercial Opportunities.**  
**CITIES AND TOWNS.**  
 Atlanta, Ga., Ga. Bureau of Indus'y & Imm'g.  
 Baltimore, Md., Md. Gas & Electric Co.  
 Bedford City, Va., Board of Trade.  
 Fayetteville, N. C., Chamber of Commerce.  
 Newport News, Va., Old Dominion Land Co.  
 Texas City, Tex., Texas City Transportation Co.  
 Winchester, Va., Business Men's League.  
**Railroads.**  
 Atlanta, Birm'gh'm & Atlantic R. R., Atlanta, Ga.  
 Atlanta & West Point R. R. Co., Montgomery, Ala.  
 Baltimore & Ohio Railroad, Baltimore, Md.  
 Carolina, Clinchfield & O. Ry., Johnson City, Tenn.  
 Central of Georgia Ry. Co., Savannah, Ga.  
 Florida East Coast Ry., St. Augustine, Fla.  
 Illinois Central Railroad Co., Chicago, Ill.  
 Norfolk & Western Railway, Roanoke, Va.  
 Richmond, Fredericksburg & Potomac Railroad, Ashland, Va.  
 Seaboard Air Line, Portsmouth, Va.  
 Southern Railway Co., Washington, D. C.  
 Tennessee Central Railroad Co., Cookeville, Tenn.  
 Virginia Railway & Power Co., Richmond, Va.  
**Industrial Track Work. [See Railways, Ind.]**  
**Injectors.**  
 Jenkins Bros., New York, N. Y.  
 Sellers & Co., Inc., Wm., Philadelphia, Pa.  
**Insulating Materials.**  
 Johns-Manville Co., H. W., New York, N. Y.  
**Insurance.**  
 Hartford Fire Insurance Co., Hartford, Conn.  
 Hartford Steam Boiler Inspection & Ins. Co., Hartford, Conn.  
 Maryland Casualty Co., Baltimore, Md.  
**Interior Trim. (Metallic.)**  
 Dahlstrom Metallic Door Co., Jamestown, N. Y.  
 U. S. Metal Products Co., New York, N. Y.  
**Interstate Commerce Practice.**  
 Van Sant, Frank, Washington, D. C.  
**Iron.**  
 Alabama Con. Coal & Iron Co., Birmingham, Ala.  
 American Rolling Mill Co., Middletown, O.  
 La Belle Iron Works, Steubenville, O.  
 Milton Mfg. Co., Milton, Pa.  
 Oliver Iron & Steel Co., Pittsburgh, Pa.  
 Republic Iron & Steel Co., Youngstown, O.  
 Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
**Irrigation Machinery.**  
 Blakeslee Mfg. Co., Du Quoin, Ill.  
 Cameron Steam Pump Wks., A. S., New York, N. Y.  
**Journals. (Financial.)**  
 Financial Review, New York, N. Y.  
**Kettles. (Steam Jacket.)**  
 Badger & Sons Co., E. B., Boston, Mass.  
 Petroleum Iron Works Co., Sharon, Pa.  
**Key Sealer. (Portable.)**  
 Burr & Son, John T., Brooklyn, N. Y.  
**Knitting Machinery.**  
 Acme Knitting Machine & Needle Co., Franklin Falls, N. H.  
**Lacquers. (All Purposes.)**  
 Durlaque Mfg. Co., St. Louis, Mo.  
**Lamp Posts. (Electric, Gas.)**  
 Western Gas Construction Co., Ft. Wayne, Ind.  
**Lamps. (Arc and Incandescent.)**  
 Boston Incandescent Lamp Co., Danvers, Mass.  
 Columbia Incandescent Lamp Co., St. Louis, Mo.  
 Fostoria Incandescent Lamp Co., Fostoria, O.  
 General Electric Co., Schenectady, N. Y.  
 Kentucky Electrical Co., Owensboro, Ky.  
 Lee Electric Co., Baltimore, Md.  
 Piedmont Electric Co., Asheville, N. C.  
 Western Electric Co., New York, N. Y.  
 Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
**Laths. (Expanded Metal.)**  
 Carolina Portland Cement Co., Charleston, S. C.  
 Milwaukee Corrugating Co., Milwaukee, Wis.



- Lathes. (Engine.)**  
Greaves, Klusman & Co., Cincinnati, O.  
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Lawn Furniture.**  
Baker Iron & Wire Works, J. E. Detroit, Mich.  
Dufur & Co., Baltimore, Md.  
Dufur, Buggott & Co., Baltimore, Md.
- Leadite.**  
Leadite Co., The, Philadelphia, Pa.
- Lighting Equipment.**  
Holophane Co., Newark, Ohio.
- Lime.**  
Carolina Portland Cement Co., Charleston, S. C.  
Security Cement & Lime Co., Baltimore, Md.  
Southeastern Lime & Cement Co., Charleston, S. C.  
Tidewater Portland Cement Co., Baltimore, Md.
- Lime. (Hydrated.)**  
Security Cement & Lime Co., Baltimore, Md.  
Tidewater Portland Cement Co., Baltimore, Md.
- Lime Kilns and Equipment.**  
Improved Equipment Co., New York, N. Y.
- Limestone Products.**  
Security Cement & Lime Co., Baltimore, Md.
- Liquor Filters.**  
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**  
Young & Selden Co., Baltimore, Md.
- Loans.**  
Assets Realization Co., Chicago, Ill.
- Lockers. (Metal.)**  
Kishley Metal Ceiling Mfg. Co., S., Pittsburg, Pa.
- Locomotives.**  
**INDUSTRIAL.**  
American Locomotive Co., New York, N. Y.  
Baldwin Locomotive Works, The, Philadelphia, Pa.  
Bryer Machine Co., John F., Ravenscroft, Pa.  
Climax Mfg. Co., Corry, Pa.  
Davenport Locomotive Works, Davenport, Ia.  
Helsler Locomotive Works, Erie, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Lima Locomotive & Machine Co., Lima, O.  
Males Co., Cincinnati, O.  
Porter Co., H. K., Pittsburg, Pa.  
Valcan Iron Works, Wilkes-Barre, Pa.
- RAILWAY.**  
American Locomotive Co., New York, N. Y.  
Baldwin Locomotive Works, The, Philadelphia, Pa.  
Lima Locomotive & Machine Co., Lima, O.  
Males Co., Cincinnati, O.  
Southern Supply Co., Norfolk, Va.
- Looms and Weaving Machinery.**  
Draper Co., Hopedale, Mass.  
Mason Machine Works, Taunton, Mass.
- Lubricants.**  
Albany Lubricating Co., New York, N. Y.
- Lumber.**  
Industrial Lumber Co., Elizabeth, La.  
Masee & Felton Lumber Co., Macon, Ga.
- Lumber. (Heavy Construction, Pitch Pine, etc.)**  
Masee & Felton Lumber Co., Macon, Ga.  
National Lumber & Creosote Co., Texarkana, Ark.  
Taylor & Co., S. E., Gulfport, Miss.
- Lumber. (Yellow Pine.)**  
Industrial Lumber Co., Elizabeth, La.
- Lumber Buggies.**  
Sole Steam Feed Works, Meridian, Miss.
- Lumber Stackers.**  
Sole Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Elmer Lewis T., Alpena, Mich.  
Lester & Co., Charles, Brooklyn, N. Y.  
Oil City Boiler Co., Oil City, Pa.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Rogersford Fdry. & Mach. Wks., Rogersford, Pa.  
Stratton & Bragg Co., Petersburg, Va.  
Universal Telegraphic Co., Baltimore, Md.
- Machinery and Supplies. (New and Second-Hand Bargains.)**  
Boston Iron & Metal Co., Baltimore, Md.  
Brown, Jas. H., Brooklyn, N. Y.  
Chicago House Wrecking Co., Chicago, Ill.  
Cleveland Belling & Machinery Co., Cleveland, O.  
Dorner Railway Equipment Co., Chicago, Ill.  
Dunets & Son, New York, N. Y.  
Hitter's Sons Co., Henry A., Philadelphia, Pa.  
Hyde Bros. & Co., New York, N. Y.  
Illinois Machinery Co., Chicago, Ill.  
Kleinhaus, H., Pittsburg, Pa.  
Lehman, Charles T., Birmingham, Ala.  
Levene & Co., E., Philadelphia, Pa.  
Linton, W. J., New York, N. Y.  
Lodge & Shipley Machine Tool Co., Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Mathes Iron Co., St. Louis, Mo.  
Pflannmiller Engineering Co., Chicago, Ill.  
Pickett Co., Inc., H. W., Philadelphia, Pa.  
Pine & Contractors' Supply Co., New York, N. Y.  
Pittsburgh Mch. & Equip. Co., Pittsburgh, Pa.  
Preston Tool & Supply Co., New York, N. Y.  
Randle Machinery Co., Cincinnati, O.  
Read Co., Howard W., Philadelphia, Pa.  
Riker Machinery Co., New York, N. Y.  
Samuel, Frank, Philadelphia, Pa.  
Seffert's Sons, Inc., L. F., Philadelphia, Pa.  
Southern Supply Co., Norfolk, Va.  
Tempe Machinery Exchange, Tampa, Fla.  
Texas Supply Co., Beaumont, Tex.  
Tomney, Frank, Philadelphia, Pa.  
Winterer Co., Herman L., Philadelphia, Pa.  
Yearley, Thomas, Philadelphia, Pa.
- Machine Tools.**  
Greaves, Klusman & Co., Cincinnati, O.  
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Machinists. (Engineers.)**  
American Mch. & Mfg. Co., Charlotte, N. C.  
Roanoke Iron Works, Inc., Roanoke, Va.  
Stratton & Bragg Co., Petersburg, Va.  
Universal Telegraphic Co., Baltimore, Md.
- Magnesite Materials.**  
John-Manville Co., H. W., New York, N. Y.
- Magnesite. (Dead Burned.)**  
Harbison-Walker Refractories Co., Pittsburg, Pa.
- Magnesite. (Electric Lift.)**  
Browning Engineering Co., Cleveland, O.
- Magnet Electro. (For Cottonseed, Linters and Bunkers.)**  
Dixie Electro Magnet Co., Memphis, Tenn.
- Magnetic Separators.**  
Faxon Co., J. W., Philadelphia, Pa.
- Mali Chutes.**  
Cutter Mail Chute Co., Rochester, N. Y.
- Mantels. (Wooden.)**  
Northcross Mantel Co., W. J., Memphis, Tenn.
- Marble Work. (Interior.)**  
Dagostin & Angelini Bros., Montgomery, Ala.  
Southern Mosaic Tile Co., Birmingham, Ala.
- Masonry Dams.**  
Multiple Arch Hydraulic Const. Co., Ltd., Spar-tanburg, S. C.
- Mechanical Draft.**  
American Blower Co., Detroit, Mich.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Sturtevant Co., B. F., Hyde Park, Mass.
- Metal Ceilings. [See Ceilings, Metal.]**
- Metaline.**  
North Amer. Metaline Co., Long Island City, N. Y.
- Metal Culverts. [See Culverts.] (Corrugated Metal.)**
- Metal Polish.**  
Hoffman, Geo. W., Indianapolis, Ind.
- Metal Shingles.**  
Burris & Co., John T., Anderson, S. C.  
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Manufacturing Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.
- Metal Window Frames and Sashes.**  
Detroit Steel Products Co., Detroit, Mich.  
Edwards Mfg. Co., The, Cincinnati, O.  
Kishley Metal Cell. & Mfg. Co., S., Pittsburg, Pa.  
United States Metal Products Co., New York, N. Y.  
Volgtmann & Co., Chicago, Ill.
- Metal Work. (Stamped and Embossed Hotel Checks, Key Tags, etc.)**  
American Railway Supply Co., New York, N. Y.
- Metal-Working Machinery.**  
Bertach & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.  
Gibbs Machinery Co., Columbus, S. C.  
Lester & Co., Chas., Brooklyn, N. Y.  
Price Machinery Co., S. M., Norfolk, Va.  
Rogersford Fdry. & Mach. Co., Rogersford, Pa.
- Micrometers, Calipers, Etc.**  
Starratt Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**  
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**  
Lockwood, Greene & Co., Boston, Mass.  
Sirlin, J. E., Greenville, S. C.
- Mill Supplies.**  
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.  
Bailey-Libby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Gainesville Iron Works, Gainesville, Ga.  
Greenwald Co., I. & E., Cincinnati, O.  
Lindsay, J. L., Inc., Richmond, Va.  
Lombard Iron Works, Augusta, Ga.  
Manning, Maxwell & Moore, Inc., New York, N. Y.  
Mecklenburg Iron Works, Charlotte, N. C.  
Nordyke & Marmon Co., Indianapolis, Ind.  
Salem Foundry & Machine Works, Salem, Va.  
Smith-Courtney Co., Richmond, Va.  
Starr Co., B. F., Baltimore, Md.  
Stratton & Bragg Co., Petersburg, Va.  
Ward-Bee Co., Washington, D. C.  
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Mixer Machinery.**  
Smith Co., T. L., Atlanta, Ga.
- Mixing Machinery.**  
Dunning, W. D., Syracuse, N. Y.  
Lynn-Superior Co., The, Cincinnati, O.
- Mortar Colors.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks.**  
Schacht Motor Car Co., Cincinnati, Ohio.
- Mouldings, Casings, etc.**  
Masee & Felton Lumber Co., Macon, Ga.
- Nails and Spikes.**  
American Steel & Wire Co., Chicago, Ill.  
Hoffman & Co., R. C., Baltimore, Md.  
Republic Iron & Steel Co., Youngstown, O.  
West Virginia Rail Co., The, Huntington, W. Va.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Nitre Pots, Eggs.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Nuts. [See Bolts, Nuts, Rivets, etc.]**
- Office Furniture.**  
Ruse & Thompson, Baltimore, Md.
- Oils. (Lubricating, etc.)**  
Albany Lubricating Co., New York, N. Y.  
Borne-Scrymgeour Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Gulf Refining Co., Pittsburg, Pa.  
Homeson & Son, W. A., Baltimore, Md.  
Texas Co., The, New York, N. Y.
- Oil-Burning Appliances.**  
Petroleum Iron Works Co., Sharon, Pa.
- Oil Cans.**  
Wall Mfg. Supply Co., F., Allegheny, Pa.
- Oil Engines. [See Engines (Oil).]**
- Oil Separators.**  
Stewart Heater Co., Buffalo, N. Y.
- Oil Stones.**  
Carborundum Co., Niagara Falls, N. Y.  
Norton Co., Worcester, Mass.
- Oil-Well Machinery.**  
Keystone Steam Well Mach. Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.
- Ore Briquetting Machinery.**  
Devillers, Robert, Brooklyn, N. Y.
- Ornamental Iron Work.**  
Belmont Iron Works, Inc., Philadelphia, Pa.  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.  
Chesapeake Iron Works, Baltimore, Md.  
Dow Wire Works Co., Louisville, Ky.  
Ohio Elevator & Machine Co., The, Columbus, O.  
Roanoke Iron Works, Inc., Roanoke, Va.  
Schreiber & Sons Co., The, L., Cincinnati, O.  
Sneed Architectural Iron Works, Louisville, Ky.  
Southern Wire & Iron Mfg. Co., Dallas, Tex.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**  
American Huhn Packing Co., New York, N. Y.  
Jenkins Bros., New York, N. Y.  
Johns-Manville Co., H. W., New York, N. Y.  
N. J. Car Spring & Rubber Co., Jersey City, N. J.  
Power Specialty Co., New York, N. Y.
- Paint. (Bridge.)**  
Detroit Graphite Co., Detroit, Mich.  
Dixon Crucible Co., Jos., Jersey City, N. J.  
Linsane Co., Philadelphia, Pa.  
National Roofing Co., Tonawanda, N. Y.
- Paints. (Cold Water.)**  
Wilhelm Co., A., New York, N. Y.
- Paint. (Metal Preservative.)**  
Detroit Graphite Co., Detroit, Mich.  
Linsane Co., Philadelphia, Pa.  
National Roofing Co., Tonawanda, N. Y.  
Wilhelm Co., A., New York, N. Y.
- Paint. (Roofing, Building, etc.)**  
Armstrong Mfg. Co., The, Richmond, Va.  
Bird & Son, F. W., East Walpole, Mass.  
Cameron & Barkley Co., Charleston, S. C.  
Carolina Portland Cement Co., Charleston, S. C.  
Chattanooga Paint Co., Chattanooga, Tenn.  
Detroit Graphite Co., Detroit, Mich.  
Dixon Crucible Co., Jos., Jersey City, N. J.  
Glidden Varnish Co., Cleveland, O.  
Linsane Co., Philadelphia, Pa.  
National Roofing Co., Tonawanda, N. Y.  
Standard Paint Co., New York, N. Y.  
Wilhelm Co., A., New York, N. Y.
- Painting. (Contractors for Bridges, Ballads, etc.)**  
Dialco & Bro., A., Pittsburg, Pa.
- Paint-making Machinery.**  
Campbell, P. F., Philadelphia, Pa.  
Lynn Superior Co., The, Cincinnati, O.
- Paper. (Roofing, Building, Sheathing, etc.)**  
Armstrong Mfg. Co., Richmond, Va.  
Barrett Mfg. Co., Philadelphia, Pa.  
Bird & Son, F. W., East Walpole, Mass.  
Cameron & Barkley Co., Charleston, S. C.  
Southern Line & Cement Co., Charleston, S. C.  
Standard Roofing Co., Tulsa, Okla.
- Passenger Coach Steps. (Extension.)**  
Blake Car Step Works, Charlotte, N. C.
- Patent Attorneys.**  
Brown, Eugene G., Washington, D. C.  
Chandler & Co., H. Ellis, Washington, D. C.  
Chandler & Chandler, Washington, D. C.  
Evans & Co., Victor J., Washington, D. C.  
Owen, Richard B., Washington, D. C.
- Patterns.**  
Roanoke Iron Works, Inc., Roanoke, Va.
- Pavement Filler.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Paving. (Contractors for Creosoted Wood Block.)**  
Creosoted Wood Block Pav. Co., New Orleans, La.
- Paving Blocks. (Granite.)**  
Harris Granite Quarries Co., Salisbury, N. C.
- Paving Blocks. (Wood Creosote-Resinate.)**  
Gulfport Creosoting Co., Gulfport, Miss.  
Southern Wood Preserving Co., Atlanta, Ga.  
U. S. Wood Preserving Co., New York, N. Y.
- Paving Brick.**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingalls Shale Brick Co., Birm'gh'm, Ala.
- Paving Machines. (Bituminous Materials.)**  
Smith Co., T. L., Atlanta, Ga.
- Perforated Metal.**  
Caldwell & Son, H. W., Chicago, Ill.  
Erdie Perforating Co., Rochester, N. Y.  
Hendrick Mfg. Co., The, Carbondale, Pa.  
Mundt & Sons, Charles, Jersey City, N. J.
- Perspectives. (Water Color, for Architects.)**  
Alger & Smith, Atlanta, Ga.
- Petroleum Refiners.**  
Gulf Refining Co., Pittsburg, Pa.  
Standard Oil Co., Cincinnati, O.
- Phosphate Machinery.**  
Aising Engineering Co., J. E., New York, N. Y.  
American Process Co., New York, N. Y.  
Bailey-Libby Co., The, Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Pratt Engineering & Mach. Co., Atlanta, Ga.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Walker & Elliott, Wilmington, Del.
- Phosphor-Bronze. (Wire Rods, Sheets.)**  
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
- Photo-Engravers.**  
Baltimore Maryland Engr. Co., Baltimore, Md.
- Pig Iron.**  
Alabama Coal & Iron Co., Birmingham, Ala.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Rogers, Brown & Co., Cincinnati, O.  
Tennessee Coal, Iron & B. B. Co., B'm'gh'm, Ala.
- Pile Drivers.**  
Browning Engineering Co., Cleveland, O.  
Bucyrus Co., Milwaukee, Wis.  
Valcan Iron Works, Chicago, Ill.
- Piling. (Creosoted.)**  
Gulfport Creosoting Co., Gulfport, Miss.  
Intern'l Creosoting & Const. Co., Galveston, Tex.  
Southern Creosoting Co., Ltd., Sildell, La.
- Pillow Blocks.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Machine Co., Columbus, Ga.
- Pine Tar.**  
Atlantic Turpentine & Refin'g Co., Savannah, Ga.
- Pipe. (Cast Iron.)**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
McWane Pipe Works, Lynchburg, Va.  
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.  
Wood & Co., B. D., Philadelphia, Pa.
- Pipe. (Coll.)**  
Columbus Iron Works Co., Columbus, Ga.  
Frick Co., The, Waynesboro, Pa.  
National Pipe Bending Co., New Haven, Conn.  
Whitlock Coll Pipe Co., Hartford, Conn.  
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.)**  
American Rolling Mill Co., Middletown, O.  
Canton Culvert Co., The, Canton, O.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Harry Steel Co., O. K., St. Louis, Mo.  
Kentucky Culvert Mfg. Co., Buechel, Ky.  
North Carolina Metal Culv. Co., Greensboro, N. C.  
Virginia Metal Culvert Co., Roanoke, Va.  
Virginia Railway Supply Co., Norfolk, Va.
- Pipe. (Riveted.)**  
Abendroth & Root Mfg. Co., Newburgh, N. Y.  
Keeler Co., E., Williamsport, Pa.  
Petroleum Iron Works Co., Sharon, Pa.  
Ruemmler-Dawley Mfg. Co., St. Louis, Mo.
- Pipe. (Spiral Riveted.)**  
Abendroth & Root Mfg. Co., Newburgh, N. Y.  
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Wood.)**  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought.)**  
La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburg, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**  
Columbus Iron Works Co., Columbus, Ga.  
Whitlock Coll Pipe Co., Hartford, Conn.
- Pipe Covering. (Steam.)**  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Pipe Covering Co., Inc., Richmond, Va.  
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**  
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
Columbus Iron Works Co., Columbus, Ga.  
York Mfg. Co., York, Pa.
- Pipe Joining. (Gas and Water Main.)**  
Leadite Co., The, Philadelphia, Pa.
- Pipe Locator.**  
Modern Iron Works, Quincy, Ill.
- Pipe Unions and Joints.**  
Dart Mfg. Co., E. M., Providence, R. I.  
National Tube Co., Pittsburg, Pa.  
Whitlock Coll Pipe Co., Hartford, Conn.
- Pipe Wrenches and Cutters.**  
Saunders' Sons, D., Yonkers, N. Y.
- Pitch.**  
Barrett Mfg. Co., Philadelphia, Pa.
- Planers. (Metal.)**  
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Planing Mill Work.**  
Masee & Felton Lumber Co., Macon, Ga.
- Plaster of Paris.**  
King & Co., J. B., New York, N. Y.
- Plaster.**  
Security Cement & Lime Co., Baltimore, Md.
- Plaster. (Asbestos Cement, Plaster of Paris.)**  
King & Co., J. B., New York, N. Y.
- Plaster Boards.**  
King & Co., J. B., New York, N. Y.  
Plaster Products Co., Hampton, Va.
- Plaster Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.
- Plates.**  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Pneumatic Tools. [See Tools—Pneumatic.]**
- Polishing Machinery. (Wheels and Blocks.)**  
Abrasive Material Co., Philadelphia, Pa.  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Power Transmission Machinery.**  
Bailey-Libby Co., Charleston, S. C.  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Cresson Co., Geo. V., Philadelphia, Pa.  
Dayton Globe Iron Works Co., Dayton, O.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Greenwald Co., I. & E., Cincinnati, O.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburg, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Lindsay, J. L., Inc., Richmond, Va.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
More Chain Co., Ithaca, N. Y.  
Nordyke & Marmon Co., Indianapolis, Ind.  
Pole Engineering & Machine Co., Baltimore, Md.  
Positive Clutch & Pulley Works, Buffalo, N. Y.  
Price Machinery Co., S. M., Norfolk, Va.  
Schubert's Sons Co., J. B., Macon, Ga.  
Wolf Co., The, Chambersburg, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Presses. (Baling, Cottonseed Oil, etc., Hydraulic and Power.)**  
Boomer & Bouchert Press Co., Syracuse, N. Y.  
Cameron Machine Co., Richmond, Va.  
Continental Gin Co., Birmingham, Ala.  
Gibbs Machinery Co., Columbia, S. C.
- Presses. (Stamping.)**  
Bliss Co., E. W., Brooklyn, N. Y.  
Lester & Co., Charles, Brooklyn, N. Y.
- Preventive for Sap Stain.**  
Church & Dwight Co., New York, N. Y.
- Printers. (Book, Catalog, Job, etc.)**  
Fleet-McGinley Co., Baltimore, Md.  
Franklin Press Co., Petersburg, Va.



- Promoters.**  
Assets Realization Co., Chicago, Ill.  
Electric Bond & Share Co., New York.
- Protector Steel.** (Concrete Curb, Steps, etc.)  
Steel Protected Concrete Co., Philadelphia, Pa.
- Pulleys.** (Friction Clutch.)  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Poole Engineering & Machine Co., Baltimore, Md.  
Positive Clutch & Pulley Works, Buffalo, N. Y.  
Sinclair-Scott Co., Baltimore, Md.  
Woods' Sons Co., T. B., Chambersburg, Pa.
- STEEL SPLIT.**  
American Pulley Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.
- WOOD SPLIT.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Lane Mfg. Co., Montpelier, Vt.  
Positive Clutch & Pulley Works, Buffalo, N. Y.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Works, Salem, Va.
- Pulleys, Shafting and Hangers.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Crescon Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Greenwald Co., I. & E., Cincinnati, O.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Mordyke & Marmon Co., Indianapolis, Ind.  
Poole Engineering & Machine Co., Baltimore, Md.  
Positive Clutch & Pulley Works, Buffalo, N. Y.  
Standard Roller Bearing Co., Philadelphia, Pa.  
Woods' Sons Co., T. B., Chambersburg, Pa.
- Pumps.** (Centrifugal.)  
Alberger Pump Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
Emerson Steam Pump Co., Alexandria, Va.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Haydon Pump Co., Quincy, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
Wheeler Condenser & Eng. Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Deep Well.)  
McGowan Co., John H., Cincinnati, O.
- Pumps.** (Hydraulic.)  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cardwell Machine Co., Richmond, Va.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Emerson Steam Pump Co., Alexandria, Va.  
Erie Pump & Engine Wks., Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Lift and Force.)  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Odorous and Excavating.)  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Pneumatic.)  
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Boiler Feed.)  
Alberger Pump Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
McGowan Co., John H., Cincinnati, O.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.  
Union Steam Pump Co., Battle Creek, Mich.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Rotary.)  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Steam.)  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Dean Steam Pump Co., Holyoke, Mass.  
Gibbs Machinery Co., Columbus, S. C.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Hooven, Owen, Rentschler Co., Hamilton, O.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
McGowan Co., John H., Cincinnati, O.  
Murray Iron Works Co., Burlington, Ia.  
Price Machinery Co., S. M., Norfolk, Va.  
Sydnor Pump & Well Co., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Wheeler Condenser & Eng. Co., New York, N. Y.  
Worthington, H. R., New York, N. Y.
- Pumps.** (Trench.)  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Vacuum.)  
Alberger Pump Co., New York, N. Y.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Dean Steam Pump Co., Holyoke, Mass.  
Deming Co., Salem, O.  
Erie Pump & Engine Works, Erie, Pa.  
Fairbanks, Morse & Co., Chicago, Ill.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Hooven, Owen, Rentschler Co., Hamilton, O.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
McGowan Co., John H., Cincinnati, O.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.  
Myers & Bros., F. E., Ashland, O.  
Sydnor Pump & Well Co., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, H. R., New York, N. Y.
- Punching and Shearing Machinery.**  
Bertch & Co., Cambridge City, Ind.  
Bliss Co., E. W., Brooklyn, N. Y.  
Ryersford Foundry & Mach. Co., Roversford, Pa.
- Pyrites Burners.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Quarrying and Stonecutting Machinery.**  
Ingersoll-Rand Co., New York, N. Y.
- Railings, Grilles, etc. (Brass.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Railroads.** (Agricultural and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]
- Railroad Equipment and Supplies.** (New and Second-hand.)  
American Frog & Switch Co., Hamilton, O.  
American Locomotive Co., New York, N. Y.  
American Valve & Meter Co., Cincinnati, O.  
Bailey-Libby Co., The, Charleston, S. C.  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Benjamin Equip. Co., Harry, St. Louis, Mo.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Boston Iron & Metal Co., Baltimore, Md.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Foster Co., L. B., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hoffman & Co., R. C., Baltimore, Md.  
Indiana Steel & Iron Co., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Macleary, J. H., Suffolk, Va.  
Males Co., Cincinnati, O.  
Manning, Maxwell & Moore, Inc., New York, N. Y.  
Maryland Equip't & Supply Co., Baltimore, Md.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
National Iron Works, Co., Houston, Tex.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Pickett Co., Inc., H. W., Philadelphia, Pa.  
Q & C Co., New York, N. Y.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Smith-Courtney Co., Richmond, Va.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Southern Supply Co., Norfolk, Va.  
Steel Rail Supply Co., The, New York, N. Y.  
United States Rail Co., Cumberland, Md.  
Vulcan Iron Works, Wilkes-Barre, Pa.  
Weir Frog Co., Cincinnati, O.  
West Virginia Rail Co., The, Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.  
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**  
American Frog & Switch Co., Hamilton, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
Robinson & Orr, Pittsburgh, Pa.  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)  
Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)  
Baldwin Equipment & Supply Co., Chicago, Ill.  
Carnegie Steel Co., Pittsburgh, Pa.  
Foster Co., L. B., Pittsburgh, Pa.  
Franks, J. E., Atlanta, Ga.  
Hoffman & Co., R. C., Baltimore, Md.  
Hyde Bros. & Co., Pittsburgh, Pa.  
Indiana Steel & Iron Co., Pittsburgh, Pa.  
Lewis & Co., Henry, Philadelphia, Pa.  
Macleary, J. H., Suffolk, Va.  
Mathes Iron & Metal Co., G. St. Louis, Mo.  
May & Turner Co., Atlanta, Ga.  
National Iron & Steel Co., Houston, Tex.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
United States Rail Co., Cumberland, Md.  
West Virginia Rail Co., The, Huntington, W. Va.  
Wilson & Co., E. H., Philadelphia, Pa.  
Zelnicke Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R.R. Frogs and Switches.]
- Rail Joints.**  
Q & C Co., New York, N. Y.
- Railways.** (Industrial.)  
Chase Fdry. & Mfg. Co., Columbus, O.  
Hunt Co., O. W., West New Brighton, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**  
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Reflectors.**  
Holophane Co., Newark, Ohio.
- Refrigerating Machinery and Supplies.**  
American Hub Packing Co., New York, N. Y.
- Reinforcing Bars.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Concrete Steel Co., New York, N. Y.  
Concrete Steel Engineering Co., New York, N. Y.  
Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)  
Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Independent Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**  
Austin-Western Co., Ltd., The, Chicago, Ill.  
Blount, C. F., Atlanta, Ga.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Case Threshing Mach. Co., J. I., Racine, Wis.  
Iroquois Iron Works, Buffalo, N. Y.  
Kelly Springfield Road Roller Co., Springfield, O.  
Syracuse Chilled Plow Co., Syracuse, N. Y.  
Universal Road Mch. Co., Kingston, N. Y.
- Roadmaking Materials.**  
Standard Oil Co., Inc., Road Oil Dept.  
Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)  
Austin-Western Co., Ltd., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Case Threshing Mach. Co., J. I., Racine, Wis.  
Iroquois Iron Works, Buffalo, N. Y.  
Kelly Springfield Road Roller Co., Springfield, O.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburgh, Pa.  
Prime White Road Oil Co., Cincinnati, O.  
Standard Oil Co., Inc., Road Oil Dept.  
Texas Co., The, New York, N. Y.
- Road Plows.**  
Case Threshing Mach. Co., J. I., Racine, Wis.  
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservatives.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Road Oil Dept.  
Texas Co., The, New York, N. Y.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)  
Veatch & Co., L. H., Louisville, Ky.
- Rolled Metal Shapes.** (For Building Material Manufacturers.)  
United States Metal Products Co., New York, N. Y.
- Rolls.** (Bending and Straightening.)  
Bertch & Co., Cambridge City, Ind.
- Roofers' and Tinner's Supplies.**  
Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)  
Diniaco & Bro., A., Pittsburgh, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)  
Allen, Herbert F. L., Washington, D. C.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Armstrong Mfg. Co., Richmond, Va.  
Asphalt Ready Roofing Co., New York, N. Y.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Bird & Sou, F. W., East Walpole, Mass.  
Cameron & Barkley Co., Charleston, S. C.  
Carolina Portland Cement Co., Charleston, S. C.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Johns-Manville Co., H. W., New York, N. Y.  
National Roofing Co., Tonawanda, N. Y.  
Standard Paint Co., New York, N. Y.  
Standard Roofing Co., Tulsa, Okla.
- Roofing.** (Cement.)  
Carey Mfg. Co., Philip, Cincinnati, O.
- Roofing.** (Metal Shingles.) [See Shingles.]  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing.** (Slate.)  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Galt & Sons, John, New York, N. Y.  
Genuine Bangor Slate Co., Easton, Pa.  
Hower, J. K., Slatington, Pa.  
Johnson, E. J., New York, N. Y.
- Roofing Tile.**  
National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Bird Band and Chipped Slate Surfaces.)  
Birmingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Flexible Cement, Bur-lap Inserted.)  
Birmingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Metal.)  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
New Orleans Rfg. & Metal Wks., New Orleans, La.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**  
American Mfg. Co., New York, N. Y.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Turner Co., J. Spencer, New York, N. Y.  
Whitlock Cordage Co., New York, N. Y.
- Rope.** (Transmission and Hoisting.)  
American Mfg. Co., New York, N. Y.  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Cordell Co., Inc., W. H., Louisville, Ky.  
Columbian Rope Co., Auburn, N. Y.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Hunt Co., O. W., West New Brighton, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Whitlock Cordage Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**  
Brown Co., A. & F., New York, N. Y.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Caldwell & Son, H. W., Chicago, Ill.  
Crescon Co., Geo. V., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**  
Eureka Fire Hose Mfg. Co., New York, N. Y.  
New Jersey Car Sp'g & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)  
Lufkin Rule Co., The, Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**  
York Safe & Lock Co., York, Pa.
- Safety Appliance.** (For Elevator.)  
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Kirkpatrick Sand & Cey. Co., Birmingham, Ala.  
Lathrop & Co., C. F., Richmond, Va.
- Sand Rammers.**  
Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.
- Sash Chain.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**  
Gibbs Machinery Co., Columbus, S. C.  
Huther Bros. Saw Mfg. Co., Rochester, N. Y.  
Smith Machine Co., H. B., Smithville, N. J.  
Sydnor Pump & Well Co., Richmond, Va.
- Saws.** (Band.)  
Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)  
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.  
Gainesville Iron Works, Gainesville, Ga.
- Sawmill Machinery.**  
Bailey-Libby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Gibbs Machinery Co., Columbus, S. C.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.  
Mecklenburg Iron Works, Charlotte, N. C.  
Price Mch. Co., S. M., Norfolk, Va.  
Schodfeld's Sons Co., J. S., Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Sydnor Pump & Well Co., Richmond, Va.  
Union Iron Works Co., Selma, Ala.
- Saw Sharpeners.**  
Abrasive Material Co., Philadelphia, Pa.  
Carborundum Co., Niagara Falls, N. Y.  
Norton Co., Worcester, Mass.  
Vittried Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gln.)  
Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**  
Howe Scale Co., New York, N. Y.  
Rome Scale & Mfg. Co., Rome, Ga.  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Screening Apparatus.**  
Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)  
Crescon Co., Geo. V., Philadelphia, Pa.  
Erdle Performing Co., Rochester, N. Y.  
Hendrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Mundt & Sons, Charles, Jersey City, N. J.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Waterloo Cement Mchry. Co., Waterloo, Iowa.
- Sealer and Stamper.** (Envelope.)  
Commercial Sales & Mfg. Co., Oberlin, O.
- Searchlights.**  
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Savannah Blow Pipe Co., Savannah, Ga.
- Sewer Pipe Machinery.**  
Taplin-Rice-Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)  
Rbb Sewer Pipe Co., Macon, Ga.  
Cannell Sewer Pipe Co., Cannell, Ind.  
Carolina Portland Cement Co., Charleston, S. C.  
Pittsburgh-Buffalo Co., Pittsburgh, Pa.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens Sons Co., H., Macon, Ga.
- Shades.**  
Holophane Co., Newark, Ohio.
- Shafting.** (Polished Steel.)  
Field & Co., Inc., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.
- Shafting Boxes.**  
Hyatt Roller Bearing Co., Newark, N. J.
- Shafting.** [See Pulleys, Shafting and Hangers.]
- Shapes.** (Rolled Steel, Brass and Bronze.)  
United States Metal Products Co., New York, N. Y.
- Sharpening Stones.**  
Norton Co., Worcester, Mass.  
Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)  
Ryersford Fdry. & Mach. Co., Roversford, Pa.
- Sheet Brass and Copper.**  
Hussey & Co., C. G., Pittsburgh, Pa.  
Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
Allegheny Steel Co., Pittsburgh, Pa.  
American Rolling Mill Co., Middletown, O.  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
La Belle Iron Works, Steubenville, O.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Metal.)  
Burris & Co., John T., Anderson, S. C.  
Carolina Portland Cement Co., Charleston, S. C.  
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.  
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hyndman Roofing Co., Cincinnati, O.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Shipping Tags.**  
Dennison Mfg. Co., Boston, Mass.
- Shredders.** (Bark, Chip, etc.)  
Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)  
Boiles Iron & Wire Works, J. E., Detroit, Mich.  
Cheapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)  
Kinner Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)  
Victor Mfg. Co., Newburyport, Mass.
- Siding and Roofing.** (Bird Band and Chipped Slate Surfaces.)  
Birmingham & Seaman Co., Chicago, Ill.
- Signs.** (Metal Lithographed.)  
Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Adv't.)  
Indestructible Sign Co., Blahopville, S. O.
- Skylights and Cornices.**  
Milwaukee Corrugating Co., Milwaukee, Wis.  
New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)  
Carolina Portland Cement Co., Charleston, S. C.  
East Bangor Consol. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Hower, J. K., Slatington, Pa.
- Slaters' Tools.**  
Galt & Sons, John, New York, N. Y.
- Sluice Gates and Appliances.**  
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)  
Chattanooga Boiler & Tank Co., Chat'n'gs, Tenn.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Petroleum Iron Works Co., Sharon, Pa.  
Rummel-Waldfly Mfg. Co., St. Louis, Mo.  
Schodfeld's Sons Co., J. S., Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)  
Weber Chlmney Co., Chicago, Ill.
- Speedometers.**  
Electric Speedometer Co., Washington, D. C.
- Spikes.** [See Nails and Spikes.]
- Springs.** (Machinery, Railway, Spiral.)  
American Steel & Wire Co., Chicago, Ill.  
Cary Spring Wks., New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinkler Systems.** (Fire Automatic.)  
General Fire Extinguisher Co., Providence, R. I.



**Stamp Mills.**  
Mackelburg Iron Works, Charlotte, N. C.

**Stamps.** (Brass, Rubber.)  
Bennett Rubber Stamp & Seal Co., Atlanta, Ga.  
Dixie Seal & Stamp Co., Atlanta, Ga.

**Standpipes.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Hartley Boiler Works, Montgomery, Ala.  
Keller Co., E., Williamsport, Pa.  
Petroleum Iron Works Co., Sharon, Pa.  
Rasmell-Dawley Mfg. Co., St. Louis, Mo.

**Stapling Machinery.** (Fruit Package Basket, etc.)  
Sarnac Machine Co., St. Joseph, Mich.

**Stationers.** (Envelopes, Letter and Bill Heads, etc.)  
Franklin Press Co., Petersburg, Va.  
Young & Selden Co., Baltimore, Md.

**Steam Feeds.**  
Boyle Steam Feed Works, Meridian, Miss.

**Steam Fitters' Supplies.**  
Bauders' Sons, D., Yonkers, N. Y.

**Steam Heating.**  
Keller Co., E., Williamsport, Pa.  
Peck-Hammond Co., The, Cincinnati, O.

**Steamship Lines.**  
Baltimore Steam Packet Co., Baltimore, Md.  
Chesapeake Steamship Co., Baltimore, Md.  
Merchant & Miners' Trans. Co., Baltimore, Md.

**Steam Separators.**  
Hopes Mfg. Co., Springfield, O.  
Ladstrom's Mach. Wks., John T., Allentown, Pa.

**Steam Shovel Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.

**Steam Shovels.** (See Excavating Machinery.)

**Steam Shovels.** (Revolving.)  
Browning Engineering Co., Cleveland, O.

**Steam Specialties.**  
Fowell Co., Wm., Cincinnati, O.

**Steam Traps.**  
American Blower Co., Detroit, Mich.  
Jenkins Bros., New York, N. Y.  
Ladstrom's Mach. Wks., John T., Allentown, Pa.

**Steel.**  
American Rolling Mill Co., Middletown, O.  
Dietrich Bros., Baltimore, Md.  
Field & Co., Inc., Philadelphia, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Oliver Iron & Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

**Steel.** (Open Hearth.)  
Erie Forge Co., Erie, Pa.

**Steels.** (Tool.)  
Field & Co., Inc., Philadelphia, Pa.  
Jensons & Sons, Inc., Wm., St. Louis, Mo.

**Steel.** (Vanadium.)  
Carnegie Steel Co., Pittsburgh, Pa.

**Steel Buildings.** (Designers, Builders.)  
American Bridge Co. of New York, New York, N. Y.  
Baltimore Bridge Co., Baltimore, Md.  
Chesapeake Iron Works, Baltimore, Md.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Farris Bridge Co., Pittsburgh, Pa.  
Missouri Valley Bridge & Iron Co., Leavenworth, Kan.

**Steel Castings.**  
Orchelle Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., R. C., Baltimore, Md.  
Reliance Steel Casting Co., Pittsburgh, Pa.

**Steel Forms.** (For Concrete Construction.)  
Blaw Col. Steel Centering Co., Pittsburgh, Pa.

**Steel Plate Work.**  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Hoffman & Co., R. C., Baltimore, Md.  
Phoenix Iron Co., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Rasmell-Dawley Mfg. Co., St. Louis, Mo.

**Steel Protector.** (Concrete Curb Steps, etc.)  
[See Protector Steel.]

**Steel Sheet Piling.**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.

**Stencils.**  
Baltimore Office Supply Co., Baltimore, Md.  
Dixie Seal & Stamp Co., Atlanta, Ga.

**Steps.** (Extension, for Railroad Coaches.)  
Blake Car Step Works, Charlotte, N. C.

**Stirrups.** (Building.)  
Chesapeake Iron Works, Baltimore, Md.

**Stock Certificates, Bonds and Seals.**  
Baltimore Office Supply Co., Baltimore, Md.  
Dixie Seal & Stamp Co., Atlanta, Ga.

**Stokers.** (Mechanical.)  
Babcock & Wilcox Co., New York, N. Y.  
Harrisburg Fdry. & Mach. Works, Harrisburg, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Storage Batteries.**  
Ene. Storage Battery Co., The, Philadelphia, Pa.  
Lee Electric Co., Baltimore, Md.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Strainers.**  
Cameron Steam Pump Wks., A. S., New York, N. Y.

**Structural Steel and Iron.**  
American Bridge Co. of New York, New York, N. Y.  
Baltimore Bridge Co., Baltimore, Md.  
Belmont Iron Works, Inc., Philadelphia, Pa.  
Carnegie Steel Co., Pittsburgh, Pa.  
Chesapeake Iron Works, Baltimore, Md.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dietrich Bros., Baltimore, Md.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Missouri Valley Bridge & Iron Co., Leavenworth, Kan.  
Phoenix Iron Co., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.

**Roanoke Bridge Co., Roanoke, Va.**  
Roanoke Iron Works, Inc., Roanoke, Va.  
Schreiber & Sons Co., The L., Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.  
York Bridge Co., York, Pa.

**Stump Pullers.**  
Zimmerman Steel Co., M. R., Lane Town, N.

**Sugar-Mill Machinery.**  
Pratt Engineering & Mach. Co., Atlanta, Ga.

**Sulphur.**  
Union Sulphur Co., New York, N. Y.

**Super-Heaters.** (Steam.)  
Babcock & Wilcox Co., New York, N. Y.  
Power Specialty Co., New York, N. Y.

**Surveying Instruments.**  
Keuffel & Esser, Hoboken, N. J.  
Weber & Co., F., Philadelphia, Pa.

**Switchboards, Switches, etc.**  
Engberg's Elect. & Mech. Wks., St. Joseph, Mich.  
Fort Wayne Electric Works, Fort Wayne, Ind.  
General Electric Co., Schenectady, N. Y.  
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

**Switches.** [See Railroad Frogs and Switches.]

**Switchstands.**  
American Valve & Meter Co., Cincinnati, O.  
Weir Frog Co., Cincinnati, O.

**Tachometers.** (Electric.)  
Electric Speedometer Co., Washington, D. C.

**Tackle Blocks.** (For Wire or Manila Rope.)  
Patterson Co., W. W., Pittsburgh, Pa.

**Tags.**  
Dennison Mfg. Co., Boston, Mass.

**Tanks.** (Iron and Steel.)  
American Water Softener Co., Philadelphia, Pa.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Case Threshing Mach. Co., J. I., Racine, Wis.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cole Mfg. Co., B. D., Newman, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Gem City Boiler Co., Dayton, O.  
Harry Bros. Co., Dallas, Tex.  
Hartley Boiler Works, Montgomery, Ala.  
Keller Co., E., Williamsport, Pa.  
Kennicott Co., Chicago Heights, Ill.  
Lombard Iron Works, Augusta, Ga.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
New Orleans Bldg. & Metal Wks., New Orleans, La.  
Oil City Boiler Co., Oil City, Pa.  
Petroleum Iron Works, Sharon, Pa.  
Rasmell-Dawley Mfg. Co., St. Louis, Mo.  
Scales & Sons Co., Wm. B., Macon, Ga.  
Schofield's Sons Co., J. S., Macon, Ga.  
Sydney Pump & Well Co., Richmond, Va.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Walsh & Weldner Boiler Co., Chattanooga, Tenn.

**Tanks.** (Wood.)  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.  
Sydney Pump & Well Co., Richmond, Va.

**Tapes.** (Measuring.)  
Keuffel & Esser, Hoboken, N. J.  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.

**Telephones.** (Supplies, Equipment.)  
Piedmont Electric Co., Asheville, N. C.  
Western Electric Co., New York, N. Y.

**Telephone Cable.**  
Western Electric Co., New York, N. Y.

**Telephone Poles.** [See Cross-ties.]  
Intern'l Cero. & Constr. Co., Galveston, Tex.  
Western Electric Co., New York, N. Y.

**Terra-cotta.**  
Atlanta Terra-Cotta Co., East Point, Ga.  
Bibb Sewer Pipe Co., Macon, Ga.  
Maryland Terra-Cotta Co., Baltimore, Md.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Building Material Co., Norfolk, Va.  
Stevens' Sons Co., H., Macon, Ga.

**Threshers.**  
Cardwell Machine Co., Richmond, Va.  
Case Threshing Mach. Co., J. I., Racine, Wis.

**Tie Plates.** (Railways.)  
Virginia Railway Supply Co., Norfolk, Va.

**Tile.** (Drain, Floor, etc.)  
Amer. Enam. Brick & Tile Co., New York, N. Y.  
Bibb Sewer Pipe Co., Macon, Ga.  
Oconee Brick & Tile Co., Milledgeville, Ga.

**Tile.** (Mosaic.)  
Dagostini & Angelini Bros., Montgomery, Ala.  
Southern Mosaic Tile Co., Birmingham, Ala.

**Tile.** (Roofing.)  
National Roofing Tile Co., Lima, O.

**Tin and Terne Plates.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Merchant & Evans Co., Philadelphia, Pa.

**Tobacco Machinery.**  
Buckeye Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.

**Tool Steels.**  
Jensons & Sons, Inc., Wm., St. Louis, Mo.

**Tools.** (Mechanists')  
Manning, Maxwell & Moore, Inc., New York, N. Y.  
Morris Twist Drill & Mach. Co., New Bedford, Mass.

**Tools.** (Mechanical.)  
Starrett Co., L. S., Athol, Mass.

**Tools.** (Pneumatic.)  
American Compressor & Pump Co., Baltimore, Md.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Independent Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.

**Torches.**  
Wall Mfg. Supply Co., P., Allegheny, Pa.

**Towers.** (Steel and Wood.)  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell & Co., Inc., Wm. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cole Mfg. Co., B. D., Newman, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.

**Traction Engines.**  
Case Threshing Mach. Co., J. I., Racine, Wis.

**Tramway.** (Overhead.)  
Northern Engineering Works, Detroit, Mich.  
Speidel, J. G., Reading, Pa.

**Tramway.** (Wire Rope.)  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Link-Belt Co., Nictown (Philadelphia), Pa.

**Transformers.**  
Crocker-Wheeler Co., Amper, N. J.  
Moloney Electric Co., St. Louis, Mo.  
Triumph Electric Co., Cincinnati, O.

**Transmission Line Supplies.** (Electric.)  
Electrical Engineers' Equip. Co., Chicago, Ill.

**Trench Excavator.**  
American Steel Dredge Co., Ft. Wayne, Ind.  
Fairbanks Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.

**Trucks.** (Motor.)  
Schacht Motor Car Co., Cincinnati, Ohio.

**Trucks.** (Platform, Freight, Mill, Factory, etc.)  
Chase Fdry. & Mfg. Co., Columbus, O.  
Clark Co., Geo. F., Windsor Locks, Conn.  
Howe Scale Co., New York, N. Y.  
Rome Scale & Mfg. Co., Rome, Ga.

**Trucks.** (Storage Battery Auto.)  
Westinghouse Machine Co., Pittsburgh, Pa.

**Trucks.** (Wood and Steel for Portable Machinery.)  
Empire Manufacturing Co., Quincy, Ill.

**Trust Companies.** [See Bankers and Brokers.]

**Tube Well Strainers.**  
Cook Well Co., St. Louis, Mo.

**Tubes.** (Boiler.)  
Allegheny Steel Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.

**Tubing.**  
Field & Co., Inc., Philadelphia, Pa.  
La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., The, Youngstown, O.

**Turbines.** (Hydraulic.)  
Allis-Chalmers Co., Milwaukee, Wis.  
Davis Foundry & Machine Works, Rome, Ga.  
Dayton Globe Iron Works Co., Dayton, O.  
Leffel & Co., James, Springfield, O.  
Poole Engineering & Mach. Co., Baltimore, Md.  
Smith Co., S. Morgan, York, Pa.  
Trump Mfg. Co., Springfield, O.

**Turbines.** (Steam.)  
Allis-Chalmers Co., Milwaukee, Wis.  
De LaVal Steam Turbine Co., Trenton, N. J.  
Emerson Steam Pump Co., Alexandria, Va.  
Ft. Wayne Electric Works, St. Wayne, Ind.  
General Electric Co., Schenectady, N. Y.  
Southwark Fdry. & Mach. Co., Philadelphia, Pa.  
Terry Steam Turbine Co., New York, N. Y.  
Western Electric Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Turbine Condensers.**  
Wheeler Condenser & Eng. Co., New York, N. Y.

**Turntables.**  
Baltimore Bridge Co., Baltimore, Md.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Turpentine.**  
Atlantic Turpentine & Refining Co., Savannah, Ga.

**Tuyeres.** (Copper and Bronze.)  
Keystone Bronze Co., Pittsburgh, Pa.

**Twine.**  
American Manufacturing Co., New York, N. Y.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Turner Co., J. Spencer, New York, N. Y.  
Whitlock Cordage Co., New York, N. Y.

**Twine Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.

**Twisting Machinery.**  
Haskell-Dawes Machine Co., Boston, Mass.

**Unions.**  
Dart Manufacturing Co., E. M., Providence, E. I.

**Vacuum Cleaning Apparatus.**  
Blaisdell Machinery Co., Bradford, Pa.

**Valves.**  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Columbian Iron Works, Chattanooga, Tenn.  
Frick Co., The, Waynesboro, Pa.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Jenkins Bros., New York, N. Y.  
National Tube Co., Pittsburgh, Pa.  
Powell Co., Wm., Cincinnati, O.  
York Mfg. Co., York, Pa.

**Varnish.**  
Berry Bros., Ltd., Detroit, Mich.  
Glidden Varnish Co., Cleveland, O.

**Veneer Machines.**  
Titus, E. E., Petersburg, Va.

**Ventilating Apparatus.** (Engineers' and Contractors')  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
Peck-Hammond Co., Cincinnati, O.  
Sturtevant Co., B. F., Hyde Park, Mass.

**Ventilators.**  
Merchant & Evans Co., Philadelphia, Pa.

**Wagons.** (Dump.)  
Eagle Wagon Works, Auburn, N. Y.  
Troy Wagon Works Co., Troy, O.

**Wall Plaster.**  
King & Co., J. B., New York, N. Y.

**Wall Plugs.** (Galvanized.)  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

**Wall Tiles.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

**Page Woven Wire Fence Co., Adrain, Mich.**

**Washers.** (Ore and Phosphate.)  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

**Washers and Rivets.** [See Bolts, Nuts, Rivets, Studs and Washers.]

**Water Filters.** [See Filters, Water, for Domestic and Industrial Purposes.]

**Water Meters.**  
American Valve & Meter Co., Cincinnati, O.

**Waterproofing.** (For Brick Work.)  
Barrett Mfg. Co., Philadelphia, Pa.  
Carolina Portland Cement Co., Charleston, S. C.  
National Roofing Co., Tonawanda, N. Y.

**Waterproofing.** (For Concrete.)  
Barrett Mfg. Co., Philadelphia, Pa.  
National Roofing Co., Tonawanda, N. Y.

**Waterproof Compound.** (Liquid.)  
Carolina Portland Cement Co., Charleston, S. C.  
National Roofing Co., Tonawanda, N. Y.

**Water-Softening Apparatus.** (Purifying.)  
American Water Softener Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Gem City Boiler Co., Dayton, O.  
Kennicott Co., Chicago Heights, Ill.  
N. Y. Cont. Jewell Filtration Co., New York, N. Y.  
Roberts Filter Mfg. Co., Philadelphia, Pa.  
Scales & Sons Co., Wm. B., Macon, Ga.  
Tucker & Laxton, Charlotte, N. C.

**Water Supply Systems.** (Town, Home, Railroad, etc.)  
Rife Engine Co., New York, N. Y.

**Water-Wheels.** [See Turbines. (Hydraulic).]

**Water-Works Supplies and Appliances.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Constr. Co., Philadelphia, Pa.  
Bibb Sewer Pipe Co., Macon, Ga.  
Blount, C. F., Atlanta, Ga.  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Coldwell-Wilcox Co., Newburgh, N. Y.  
Columbian Iron Works, Chattanooga, Tenn.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
Leadite Co., The, Philadelphia, Pa.  
McWane Pipe Works, Lynchburg, Va.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Stevens' Sons Co., H., Macon, Ga.  
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.

**Welgher.** (Recording Liquid.)  
Worthington, Henry R., New York, N. Y.

**Well Contractors.** (Oil, Artesian, etc.)  
Cook Well Co., The, St. Louis, Mo.  
Hughes Specialty Well Drill Co., Charleston, S. C.  
Stothoff Bros., Flemington, N. J.  
Sydney Pump & Well Co., Richmond, Va.

**Well Tools and Supplies.**  
Cook Well Co., The, St. Louis, Mo.  
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.

**Wheels and Axles.**  
Empire Manufacturing Co., Quincy, Ill.  
Oliver Mfg. Co., W. J., Knoxville, Tenn.

**Wheelbarrows and Trucks.**  
Syracuse Chilled Plow Co., Syracuse, N. Y.

**Wheels.** (Steel and Steel Tired.)  
Carnegie Steel Co., Pittsburgh, Pa.  
Empire Manufacturing Co., Quincy, Ill.

**Window Frames and Sashes.** (Fireproof.)  
Detroit Steel Products Co., Detroit, Mich.  
United States Metal Products Co., New York, N. Y.  
Voigtmann & Co., Chicago, Ill.

**Window Guards.** (Wire.) [See Wire Goods.]

**Windmills.**  
Baltimore Cooperage Co., Baltimore, Md.  
Caldwell Co., Inc., W. E., Louisville, Ky.

**Wire Insulating.**  
General Electric Co., Schenectady, N. Y.

**Wire.** (Barbed Wire, etc.)  
American Steel & Wire Co., Chicago, Ill.  
Boehling's Sons Co., J. A., Trenton, N. J.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Wire Cloth.** (Iron, Steel, Brass, etc.)  
American Steel & Wire Co., Chicago, Ill.  
Caldwell & Sons Co., The H. W., Chicago, Ill.  
Diamond Wire Products Co., Columbus, O.  
Meyers Mfg. Co., Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Wight & Co., W. N., New York, N. Y.

**Wire Goods.**  
Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Buckeye Wire & Iron Works Co., Columbus, O.  
Cincinnati Mfg. Co., Cincinnati, O.  
Diamond Wire Products Co., Columbus, O.  
Dow Wire Works Co., Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Russell & Co., Baltimore, Md.  
Meyers Mfg. Co., The Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Netting.**  
American Steel & Wire Co., Chicago, Ill.  
New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Rope.**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Contractors' Plant Mfg. Co., Inc., Buffalo, N. Y.  
Roehling's Sons Co., J. A., Trenton, N. J.  
Williamsport Wire Rope Co., Williamsport, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Wire Rope Clips.**  
American Holst & Derrick Co., St. Paul, Minn.

**Wire Rope Thimbles.**  
Broderick & Bascom Rope Co., St. Louis, Mo.

**Wood Blocks.** (For Faving and Factory Floors.)  
U. S. Wood Preserving Co., New York, N. Y.

**Woodboring Machines.**  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Ingersoll-Rand Co., New York, N. Y.

**Wood-Fiber Plaster.**  
King & Co., J. B., New York, N. Y.

**Wood Pipe.** (For Water, etc.)  
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Lane Mfg. Co., Montpelier, Vt.  
Ober Mfg. Co., Chagrin Falls, O.  
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Smith-Courtney Co., Richmond, Va.  
Smith Machine Co., H. B., Smithville, N. J.  
Wilmington Iron Works, Wilmington, N. C.

**Yarn.** (Tarred Sisal.)  
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Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Whitlock Cordage Co., New York, N. Y.



Ads. marked \* appear every other week.  
Ads. marked † appear in first issue of the month.  
Ads. marked ‡ not in this issue.

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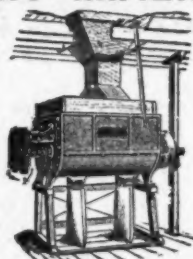
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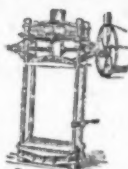


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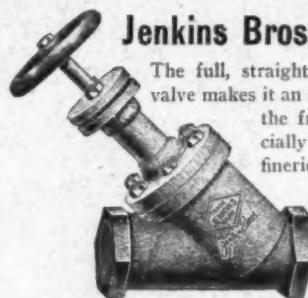
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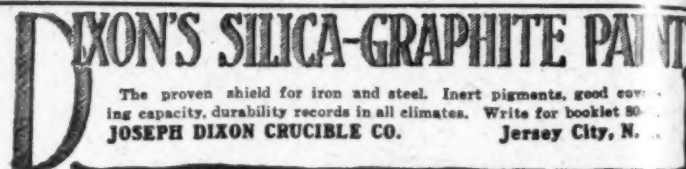
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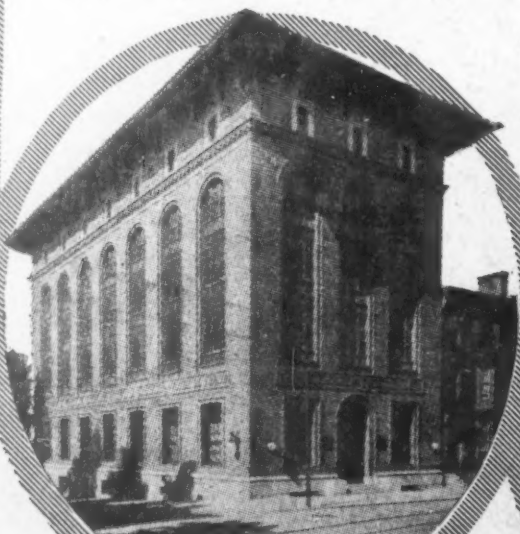
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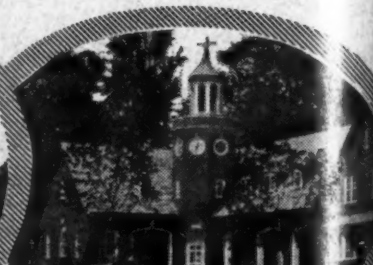
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